DOCUMENT RESUME

ED 177 302 CE 022 271

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TITLE	Wyoming Experience-Based Career Education Evaluation Handbook.
INSTITUTION	Wyoming State Dept. of Education, Cheyenne.
SPONS AGENCY	National Inst. of Education (DHEW), Washington, D.C.
PUB DATE	78
CONTRACT	400-76-0155
NOTE	130p.; For related documents see CE 022 272-273
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Administrator Guides; *Career Education; *Curriculum Evaluation; Data Analysis; Data Collection; Elementary Secondary Education; *Evaluation Methods; *Experiential Learning; Guidelines; Measurement Instruments; *Program Effectiveness; *Program Evaluation; Reports; Sampling; Site Analysis
IDENTIFIERS	Wyoming

ABSTRACT

This evaluation handbook is the third in a series of three handbooks developed for individuals, school districts, and agencies interested in implementing career education programs. It is a user's manual with easy-to-follow directions for the implementation of specific evaluation activities. The handbook is divided into the following nine sections: (1) evaluation plan; (2) evaluation designs; (3) sampling; (4) instrumentation; (5) data collection; (6) data analysis; (7) site review; (8) program status review; and (9) report writing. A brief introduction provides an overview of the handbook and describes its organization. Both product and process evaluation are dealt with in this handbook. The overall intent is to provide information local administrators can use to evaluate the impact of career education and the effectiveness of the implementation of career education. Each section can be used independently or as a reference. (BM)

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WYOMING EXPERIENCE-BASED CAREER EDUCATION EVALUATION HANDBOOK

WYOMING STATE DEPARTMENT OF EDUCATION
ROBERT G. SCHRADER
STATE SUPERINTENDENT OF
PUBLIC INSTRUCTION - 1978

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U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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CE 022 271

The material in this handbook was prepared pursuant to Contract No. 400-76-0155 with the National Institute of Education, Department of Health, Education and Welfare.

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PREFACE

The Evaluation Handbook written by Kendrick L. Spooner and Jeffrey E. Shafer of the Center for Education and Management, Greeley, Colorado, is the result of cooperative planning and discussion with various personnel of Wyoming educational institutions. It is addressed primarily to local program directors, principals and other administrators concerned with effective evaluation of EBCE programs.

Individuals with varying degrees of expertise will use the handbook. For some there may not be adequate detail given, so other resources will be required; for others the material will seem over simplified. This is an inherent problem in any attempt to "cookbook" concepts.

The handbook is written so that each section can be used independently as a handy reference.

TABLE OF CONTENTS

Page

PREFACE

I. AN INTRODUCTION TO EVALUATION I-1

Overview
Organization

II. EVALUATION PLAN EP-1

Overview
Purposes
Objectives
Sample Evaluation Plan

III. EVALUATION DESIGNS ED-1

Overview
Definitions of Terms and Symbols
A Word About Internal Validity
Evaluation Designs

1) One group pre-test/post-test
2) Randomized control group pre-test/post-test
3) Non-Randomized control group pre-test/post-test
4) Posttest comparison with matched groups
5) Problems of Attrition/Dropouts and non-students
6) Contamination Concerns

IV. SAMPLING SA-1

Overview
The Concept of Random Sampling
Selecting a Random Sample
Sampling Frame

Method I
Method II

TABLE OF CONTENTS (Continued)

		Page
V.	INSTRUMENTATION	IN-1
	Overview	
	Existing Instruments	
	Basic Considerations	
VI.	DATA COLLECTION	DC-1
	Overview	
	Some Important Considerations	
	Steps in Planning a Data Collection Effort	
	Preparation of Timeline	
VII.	DATA ANALYSIS	DA-1
	Overview	
	General Types of Statistical Computations	
	Mechanics of Analysis	
	Irregularities in Data	
	Low Correlation - Pre and Posttest	
	Ceiling and floor effects	
	Large changes in standard deviation	
	Differences between pretested students who took the posttest and those who didn't	
VIII.	STIE REVIEW	SR-1
	Overview	
	Pre-Review Activities	
	Data Collection Activities	
	Judgments and Recommendations	
	Summary	
	Sample Site Review Report	
IX.	PROGRAM STATUS REVIEW	PSR-1
	Overview	
	Program Status	
	Summary	
	Sample Status Review Report	

TABLE OF CONTENTS (Continued)

Page

X. REPORT WRITING RW-1

Overview
Final Summative Report Format
A Word About Lay Audiences
An Alternative Report Format

LIST OF TABLES

TABLE		Page
1)	OBJECTIVE-EVALUATION STRATEGY MATRIX	EP-10

LIST OF FIGURES

FIGURE		Page
1	EXAMPLE OF TIMELINE	EP-7
2	DEFINITIONS OF TERMS AND SYMBOLS	ED-2
3	ONE GROUP PRETEST-POSTTEST DESIGN	ED-5
4	RANDOMIZED CONTROL GROUP PRETEST-POSTTEST DESIGN	ED-4
5	ON-RANDOMIZED CONTROL GROUP PRETEST-POSTTEST DESIGN	ED-8
6	POSTTEST COMPARISON WITH MATCHED GROUPS	ED-9
7	EVALUATION DESIGN SUMMARY CHART	ED-12
8	TABLE OF RANDOM NUMBERS	SA-3
9	SAMPLING FRAME	SA-6
10	DECISION MATRIX OF EVALUATION DESIGN	SA-8
11	ORGANIZATIONAL COMPONENTS	DC-2
12	DESCRIPTIVE STATISTICS - COMPUTING GUIDE	DA-4
13	MASTER SITE-VISIT SCHEDULE	SR-5
14	SAMPLE PROGRAM STATUS REVIEW FORM	PSR-6

LIST OF FORMS

FORM		Page
1	DATA RECORD	ED-6
2	EVALUATION DATA MATRIX	DC-3
3	DATA COLLECTION TIMELINE	DC-6
4	PROGRAM STATUS REVIEW FORM	PSR-3

AN INTRODUCTION TO EVALUATION

This handbook is the third in a series of three developed by the Center for Education and Management for individuals, school districts and agencies interested in implementing Career Education programs. It is a user's manual with easy-to-follow directions for the implementation of specific evaluation activities. The handbook contains practical suggestions in the following areas:

Evaluation Planning

Process	Product
Data Collection	Evaluation Design
Site Review	Sampling Concerns
Program Status Review	Instrumentation
	Data Analysis

Report Writing

Overview

This handbook details two types of evaluations that can be used by local administrators to review the progress and success of a Career Education program. The intent of the handbook is to provide enough information so that administrators can complete necessary tasks related to evaluation. In some special cases the handbook refers the users to references where more detailed information can be obtained. This would especially apply if the user is not statistically oriented. In some instances a statistician will need to be consulted in order to accomplish some of the more complex analyses. Except for these limitations, the handbook should provide the information necessary to implement and complete a useful evaluation of a Career Education program. It should be emphasized that the evaluation techniques described in this handbook can be used for any career programs.

Organization

The handbook deals with product and process evaluation. Product evaluation addresses the following question:

- Has the career education program had a positive effect on the students, the community or other aspects of the school?

In order to detail the product evaluation, one must first develop an evaluation plan or design. Second, one must decide which individuals, groups or agencies, etc. will be involved in the evaluation. Third, one must decide what instruments are needed, acquire tests, questionnaires or other types of measuring devices that will ask questions relative to the areas impacted by career education. Fourth, one must analyze the data or information collected in light of the questions developed in the evaluation design. And fifth, one must write a report that will communicate the information to those individuals responsible for the program.

In summary one should:

- Develop a plan.
- Decide who will be involved.
- Decide instruments needed.
- Analyze data.
- Report findings.

The second part of the handbook deals with the evaluation of the program's processes. Process evaluation essentially addresses the following question:

- To what extent is the program being implemented in light of the planned activities?

There are two basic areas that will be discussed in this part. First is the site review. A site review can be completed by local administrators, career education advisory committee members, invited state department consultants, or other education professionals. The second area of the process evaluation deals with an activity called program status review. This activity helps the administrator monitor the management plans developed during the implementation stage of program planning.

Again, the overall intent of this handbook is to provide information local administrators can use to evaluate the impact of career education and the effectiveness of the implementation of career education.

EVALUATION PLAN

As a first step in evaluating a career education program, the evaluator needs to develop an evaluation plan that maps out the activities, instruments and resources needed to adequately collect and provide information to decision-makers. The purpose of this section is to provide guidelines for the development of an evaluation plan.

Overview

This section will attempt to describe the elements one should consider in planning an evaluation. It is important to note that the authors' definition of evaluation is a process for providing useful information for decision-making.

An evaluation plan will generally include the following sections. Of course, there may be evaluations where other items are considered. In an effort to keep the planning process simple only these items will be discussed. The remainder of this section defines the content of each item in detail.

1) Stating purposes and objectives for the evaluation.

2) Identifying and clarifying process and product objectives.

3) Specifying measurement instruments.

4) Specifying procedures for data collection.

5) Specifying procedures for analyzing the data.

6) Specifying the format for reporting information.

7) Determining sequence and timing of evaluation activities.

Step 1: State the purpose for the evaluation.
There may be several purposes for developing an evaluation plan. One of the most obvious is the need to prove the worth of a particular activity, in light of alternative activities. That is, did a change occur that can be attributed to the project? This type of evaluation often involves control groups, tends to be somewhat expensive, and usually involves generalization of the results

of the project to other settings. Cause and effect and generalization to other settings are related to the control an evaluator has over variables which threaten the internal validity of the experiment. "Gaining control" is an expensive, complex and time-consuming problem. The specifics for developing evaluation designs that attempt to prove the worth of a program are addressed on pages ED-1 and ED-2, Section 3 of this handbook.

The second major purpose of evaluation is to provide the project manager with information in process evaluation. An effort is made to determine whether or not the activities are in line with those intended, and if the activities have appropriate impact. Students often fail to learn when the teacher fails to teach. That is, the hoped-for product or outcome will not be achieved if the process is not implemented. On the other hand, when students do learn, it would be nice to know why and how they learned. The specific strategies addressed in this handbook for completing evaluations in the formative setting are: site reviews and program status reviews.

Illustration:

Following is an illustration of a statement of purpose for an evaluation.

The purpose of the evaluation will be to provide information pretaining to 1) the identification of students' strengths and weaknesses, 2) the description of the progress of the program in light of the expected outcomes, and 3) assessing student achievement in light of the program's stated objectives.

This statement is very general. The next level takes the evaluation purpose a step further and breaks it down into more specific tasks within the context of formative and summative studies.

Process evaluation will deal with three concerns:

1) Describing the effect of the program on student attendance;
2) Describing the process and activities actually taking place; and
3) Describing the student's and parent's perceptions of students' educational asperations and post-secondary goals.

The product evaluation will yield comparative data on these outcomes:

1) Student attendance,
2) Student achievement, and
3) Student attitudes.

Step 2: Identify and clarify the program's objectives.

There are basically two types of objectives that need to be identified in most evaluations: process objectives and product objectives. Specific directions for writing objectives are given in Section Two, "Objective Clarification," of the Wyoming Career Education Implementation Handbook.

There are techniques described throughout the handbook that will aid an evaluator in observing behavior. The planning handbook discusses survey techniques and lists several instruments available to measure the various objectives of many career education programs.

Step 3: Specify and describe procedures for collecting data.

There are several techniques for data collection described throughout the handbooks that will aid an evaluator in observing behavior, such as surveys, advisory groups, etc.

To illustrate this section, only evaluation in the formative setting is presented.

The purpose for evaluation in the formative setting is to improve the quality of the intended outcome.

The evaluator has identified three areas where information is needed:

- Students' and parents' perception of the program and the student's attitude towards his future,
- Process concerns related to the implementation of stated activities described within the proposal, and
- Attendance figures for those students in the program.

Data collection activities for each of these areas are described below:

Perception

- o Interview several students, parents and project staff to identify questions that should be included on a parent and a student survey.
- o Develop survey forms.
- o Pilot test the form with students and parents.
- o Review results with project staff.
- o Draw a random sample of students and parents.
- o Administer questionnaire.
- o Analyze data, using summary statistics.
- o Report findings.

It can be seen that the evaluator proposes to use several observation techniques such as interviews, questionnaires, site visit check lists and inspection of current records. In making observations, one must be concerned about the reliability, validity, objectivity and appropriateness of the observations. These are concepts that are adequately explained in any introductory research and measurement text books. More specific information is provided in the data collection of this handbook.

Step 4: Analyze the data so that the information is directed towards decisions.

Data analysis is addressed in a later section of this handbook. This particular area is not addressed extensively because of the massive amount of literature already available in the area of statistical analysis. Only a few simple designs are explained. It is suggested that the reader refer to his favorite statistic book for more detailed information.

The sample evaluation plan on page EP-8 illustrates the use of summary statistics such as means, standard deviations, percentages and frequencies. The analysis can become, and often does become, more complicated than those described in the illustration; however, much can be done to answer key evaluation questions using these very basic statistical tools.

Step 5: Specify the reporting requirement.

The reporting of evaluation findings is a very important component of any evaluation plan. Within this section of the plan one must specify the general outline of the evaluation report if one is to report findings from each evaluation activity (a site visit, a student follow-up, and experimental product design). A summary and conclusion section that synthesizes each evaluation activity should be stated.

The following is an outline that might be contained in an evaluation plan.

Outline for the Evaluation Report

- Abstract
- Description of Project
- Evaluation Design
- Process Evaluation
  - Objective Clarification
  - Site Visits
  - Program Status Review
  - Recommendations
  - Action Taken Upon Recommendations
- Product Evaluation
  - Data Analysis
  - Findings
  - Recommendations

Step 6: Develop a Time Line

To indicate a sequence or timeline, one needs to chart the processes in chronological order as in Figure 1. A simple way of doing this is by means of GANTT charting. (This method is illustrated in the sample evaluation plan, page EP-12).

Summary

In summary, an evaluation plan is a description of the intended activities of the evaluator, directed by a purpose and objectives statement. The many activities outlined in an evaluation plan will vary depending upon the evaluation setting and the purpose of that evaluation. The evaluation plan is a beginning point from which the evaluator and project staff can negotiate a final evaluation procedure. There will be instances where the plan cannot be implemented or must be modified in order to be implemented. A variety of unforeseen constraints (such as school board action or other

policy level decisions being made after the fact, inability to acquire the anticipated support from key administrators or the unacceptability of proposed instruments for data collection) can necessitate modification of original plans.

Following is a sample evaluation plan for an Experience-Based Career Education Program.

FIGURE 1

EXAMPLE OF TIMELINE

Process Information

There will be two rounds of site visits; each will follow the activities outlined below:

Activities:

1) Develop site visit check list.
2) Make site visit to each school.
3) Complete check list and describe problems identified.
4) Complete a report for each site visit.

Time Line:

1)	Complete first site visits	January
2)	Submit reports of first site visits	February
3)	Complete second site visits	May
4)	Submit reports of second visits (Final Report)	June

SAMPLE EVALUATION PLAN

Introduction

In response to a request for evaluation the following is a proposed evaluation plan which includes:

1) procedures for evaluating the objectives and impact of the program,
2) time line for the evaluation,
3) procedures to be used for instrument development,
4) reporting procedures.

The purposes of this evaluation is to provide information for improving the experience-based career education program described in the implementation plan.

Procedures

To evaluate the progress of the project in meeting the 14 objectives, three forms of data collection are proposed: site visit, end-of-year questionnaire and cognitive tests. Table 1 summarizes the procedures to be used in relation to the stated objectives.[1]

Site Visit:

In order to focus on the objectives there will be four levels of inquiry: 1) student interviews, 2) staff interviews, 3) record review and 4) employer (community resource person) interviews.

Instruments will be developed so that the site visit is structured around the outcome objectives and the proposed activities for achieving the outcome. These instruments will be developed prior to the site visits.

As part of the evaluation, a program status review of each site will be conducted during the site visit.[2] In addition, staff within the school will be interviewed to assess the extent of impact the project has had on the total school.

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[1] These objectives were spelled out specifically in the program's implementation plan.

[2] Program status reviews are addressed later in the handbook.

Students will be interviewed for knowledge, experiences and skills obtained during the career education program.

The site visits will be held in April of 19__.

End-of-Year Questionnaires

The end-of-year questionnaires will be structured so that students are tested on the objectives indicated in Table 1. Each item on the form will be structured in light of the objectives.

The instrument will be completed during the first week of May by all students involved in the Career Education Program. The schools will be responsible for administering the questionnaires and forwarding the data to the evaluator.

Testing

As part of the end-of-year data collection, a standardized norm-referenced test will be administered in the areas of English and mathematics. The CTBS level 4 (form S) is recommended. The students' scores will be compared to national norms. In addition, a short test will be developed by the evaluator to measure critical thinking, basic skill and citizenship. The testing will not exceed two, two-hour sessions.

Review of Dissemination

The evaluator will develop a plan for reviewing the dissemination of the project with the project director. The major focus of the plan will be to evaluate the impact of the cadre training for dissemination. The outcome evaluation for the dissemination cannot be addressed explicitly during this phase of the project. A follow-up of the impact of the workshop should be completed as part of the third-year evaluation plan. Criteria for statewide impact will be defined by the project director, state advisory committee and the evaluator.

Instrument Development

All instruments to be developed as referred to within this proposal will use the following procedure:

1) The objectives to be measured will be clarified by meeting with the project director.

TABLE 1

OBJECTIVE - EVALUATION STRATEGY MATRIX

Objective	Site Visit	End of Year Questionnaire	CTBS Test	Review and View Dissemination
Apply Basic Skills	X		X	
Basic Skills and Career Requirements	X	X		
Applied or Trained Skills		X		
Critical Thinking	X	X	X	
Functional Citizenship		X	X	
Personal Social Development	X	X		
Competencies	X			
Identifying Career Interest/Abilities	X	X		
Understand Work	X (Employer Interview)	X		
Employability Skills	X (Employee Interview)	X		
Career Knowledge	X (Records/Employer Interview)	X		
Dissemination				X

2) Items will be developed by the evaluator for each objective to be measured.

3) Items will be reviewed by project director.

4) Tests or questionnaires will be developed and items needing revision will be revised.

5) Test or questionnaires will be pilot tested.

6) Test or questionnaire will be finalized and printed by the evaluator.

7) Sufficient copies will be sent to each location by the evaluator, along with instructions for administering the instrument.

All tests will be objective-referenced instruments. All questionnaires will speak to either process or outcome objectives.

Reports

There will be three reports delivered to the project director, two interim and one final report.

The suggested reports are as follows:

Feb. 28 - A progress report on the instrument development and scheduling of the site visit.

May 30 - Complete report on the site visit observation, findings and conclusions.

Aug. 30 - Final report detailing the site visit and testing results, in seven sections: introduction, description of program, the evaluation, report of findings, conclusions for each site, report on dissemination, and a final section making comparisons among sites, drawing general conclusions and making general recommendations.

TIME LINE

Activity	S O N D J F M A M J J A
Complete Contract for Evaluation	Oct. 30
Construct Site-Visit Schedule with the Site Involved	Nov. 30
Review Management Plans	Dec. 15
Review the Project Dissemination Plans	Jan. 1
Develop Interview Questionnaire for Site Visit	Feb. 28
Submit First Quarterly Report	Feb. 28
Complete Site Visit	April 30
Site Visit and Second Quarterly Report	May 30
Test Students End of Year Questionnaire and CTBS	May 7
Attend Dissemination Meeting	May 15
Review Data from LEA	May 15
Develop Instrument for Dissemination Workshop Evaluation	June 30
Analyze Data	June 15
Evaluate Training Session	August 15
Final Report	August 30

EVALUATION DESIGNS

This section describes evaluation models most appropriate for assessing the impact of a career education program upon students. The models discussed in this section are not necessarily the only models suitable for this purpose but are recommended based on the usual operating constraints of American school systems.

Overview

In an ideal situation, the planning of an evaluation would take place concurrently with the planning of the project to be evaluated. Obviously, in the operating environment of American school systems, this is not always possible. Therefore, it is important to be aware of the fact that some decisions made by project administrators, school boards, advisory committees, etc. have important implications for evaluation. This section will look at several evaluation designs and some of the weaknesses associated with these designs. Suggestions will be given so that some of the common weaknesses that attach themselves to these designs can be addressed and, when possible, avoided. Some designs are relatively simple to use (one group pre-test/post-test design) and require only an elementary understanding of statistical concepts. Others (covariance designs) require the expertise of a statistician and should not be attempted without special assistance.

For purposes of this handbook the following symbols will be used to illustrate evaluation designs.

T_1 = pre-test
T_2 = post-test
X = treatment (career education program)
o = no-treatment
R = random assignment
E = treatment (experimental group)group
C = control group

Figure 2 defines these terms further.

FIGURE 2

DEFINITION OF TERMS AND SYMBOLS

Control Group:	Sometimes known as "Comparison Group", this group does not receive the education/ training the treatment group receives. Frequently the control group goes through a traditional course of study in the same content area as the treatment group.
Pre-Test:	An instrument used to assess level of participant performance before a project begins.
Post-Test:	An instrument used to assess level of performance after a project has been completed.
Random Assignment:	A procedure for assigning treatments to subjects, where each subject has the same probability of receiving the treatment.
Random Selection:	A procedure for selecting elements of a population (students) where each element has the same probability of being selected into the sample as every other element.
Treatment Group:	Sometimes used interchangeably with "Experimental Group." This is the group which receives the new program of career education.

Alternative Causes for Post-test Gains

(Internal validity of a design asks the question:) Did the treatment, X, really produce a change in the student's score on the post-test measure? The objective of evaluation design is to control the factors that could account for a change in pre-test to post-test scores aside from the treatment. The best way to do this is to use a design that incorporates a control group. (In normal school situations, random assignment is not always possible; however, treatments (X) should be assigned to groups randomly.)

Factors that could affect the outcome of the program are:

History: Often students experience an event, besides the treatment either in or outside the EBCE program, that may partially account for a change in test scores.

Maturation: Normal growth processes in students during the progress of the program will affect responses to test items. The students may do better or worse on the post-test (T_2) not because of the effect of the treatment but because they are older, are tired or have lost interest.

Pre-testing: The pre-test (T_1) may function as a learning experience that will cause students to change their answers on the post-test regardless of whether or not the treatment is used.

Measuring Instruments: Often subtle changes in testing instruments, human raters or interviewers will affect the scores obtained. If the post-test is more difficult than the pre-test or if a person rates students according to rating scales, these factors can cause a difference in the two scores.

Regression: In many instances of evaluation studies, groups are selected on the basis of extreme scores. Regression is a complex phenomenon. Essentially it involves an extreme scores "tendency" to approach the mean on the post-test. In other words, low initial scores become higher and high initial scores become lower on the post-test regardless of the treatment applied.

There are other factors that might affect the outcome of an evaluation, but a complete discussion of these is beyond the scope of this handbook. Those interested in studying these and other questions concerning validity should consult Campbell, D. T. and Stanley, J. Experimental and Quasi Experimental Designs for Research, Chicago: Rand McNally, 1966.

EVALUATION DESIGN

1) One group pre-test/post-test design (Figure 3)

If faced with the prospect of being "locked into" this design, go ahead and use it. Be sure, however, to aknowledge its weaknesses. For a concise discussion of the weaknesses, see Stephen Isaac and William B. Michael's book Handbook in Research and Evaluation for Education and the Behavioral Sciences, San Diego: Robert R. Knapp, Publisher.

2) Randomized Control Group Pre-test/Post-test Design

FIGURE 4

Randomized Control Group Pre-test/
Post-test Design

Group	Pre-test	Treatment	Post-test
Students in the Program	R T_1	X	T_2
Students Not in the Program	R T_1	o	T_2

Design 2 requires considerably more planning and coordination than Design 1. In addition, it is often necessary to obtain cooperation from building administrators for Design 2 because the use of the design assumes the evaluator had control over scheduling of classes, assignment of students to classes and other administrative prerogatives. Initial efforts expended to plan for this design will be rewarded with an evaluation that controls several factors the first design neglects. In the final analysis, this design is preferable to Design 1 and should be used if possible.

FIGURE 3

One group pre-test/post-test design

Pre-test	Treatment	Post-test
T_1	X	T_2

This design is probably the most common evaluation design used in education, and usually satisfies most administrative requirements. It answers the question of how much student performance changed during the term of the project. Evaluators who use this design are interested only in the students studied and do not plan comparisons with other groups. With this design there is no assurance that X (treatment) is the only or even the major factor in a difference between the pre-test and post-test scores.

Often, however, those responsible for evaluation are faced with a situation which arises when no provision has been made for including a group of students as a control, perhaps due to the size of the district or the amount of money budgeted for the project, or because all students comprising a particular group or grade level have been given the career education treatment. If this design is used to evaluate a project, the following steps should be followed:

Step 1: Administer T_1 , the pre-test, to students within one or two weeks of program start-up.

Step 2: Expose students to the new method of career education for a given period of time.

Step 3: Administer T_2 , the post-test, to students after a given period of time. Compare T_1 and T_2 to determine what difference, if any, exposure to the career education program has made. Form 1 can be used to record the data.

Step 4: Apply the appropriate statistical test to determine whether the difference is significant (see Data Analysis section for discussion of appropriate tests of significance).

Form 1

DATA RECORD

Project: _____

Page ___ of ___

School _____ Class/ Group _____ Treatment/ Control _____ Date _____

Tests: Pretest Posttest

Name _____

Level _____

Form _____

Student Name	ID No. Grp.	Tr.	Ind.	Date Pre	Post	Raw Score Pretest	Posttest	Standard Score Pretest	Posttest
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									
17.									
18.									
19.									
20.									

Generally, with advance planning and incorporation of students into the evaluation design as a control group this design may be avoided. M re useful designs can then be used to assess the impact of the career education program.

A feature of this design not found in design one is that each student in the study has an equal chance to be included in the experimental group (see Sampling Concerns section for a discussion of random assignment). If this design is used to evaluate a project the following steps should be followed:

Step 1: Using either a table of random numbers or other appropriate methods, select and assign subjects needed for both a control and treatment group.

Usually, in experience-based career education programs (EBCE), the population of students is already determined by the simple fact that they have been recruited or have signed up in advance for a specific program. (In these cases it becomes impossible to assure each student an equal chance to be included in the treatment group).

Other designs to be presented later in this section will address some of these concerns. Generally, evaluation designs that do not select subjects or assign treatments in a random fashion are perfectly defensible, especially with respect to innovative programs and action research where the evaluator is exploring for researchable problems or the development of new ideas.

Step 2: Assign students to the treatment or control groups by random methods.

Step 3: Administer the pre-test (T_1) to both the treatment and control groups. Calculate the means for both groups.

Step 4: Assure that all conditions for both groups are the same, except for exposing the treatment group to the treatment for a given period of time.

Step 5: Administer the post-test (T_2) and calculate the mean for each group separately.

Step 6: Calculate the difference between T_1 and T_2 means for each group separately.[1]

---

[1] A more appropriate analysis is the analysis of covariance, but this procedure should only be attempted with the aid of a statistician.

Step 7: Compare these differences to determine whether the treatment, X, has produced a change in favor of the treatment group over the control group.

Step 8: Apply the appropriate statistical test to determine whether the difference in the two sets of scores is significant. (See Data Analysis section for discussion of appropriate tests.)

This design is the ideal, which a person responsible for evaluation should strive to implement. In this design all the internal validity factors discussed above are controlled.

3. Non-randomized Control Group Pre-test/Post-test Design

This design is the same as Design 2 except that students have not been randomly assigned. As mentioned above, evaluators have little control over scheduling of students and are often faced with preassembled groups. Given this situation, the evaluator must try to select a comparison (control) group that is as similar to the treatment group as availability permits.

FIGURE 5

Non-randomized Control Group Pre-test/
Post-test Design

		Pre-test	Treatment	Post-test
Students in the Program	E	T_1	X	T_2
Comparable Students Not in the Program		T_1	o	T_2

It is preferable to use a comparison group within the same school if possible. On the other hand, all students with similar characteristics may be in the EBCE program. In this case you will probably have to go to another school for your comparison group. The kinds of characteristics to be considered could include a number of the following:

- prior academic achievement
- population density of the community
- size of school
- school organization (9-12 vs. 10-12, etc.)

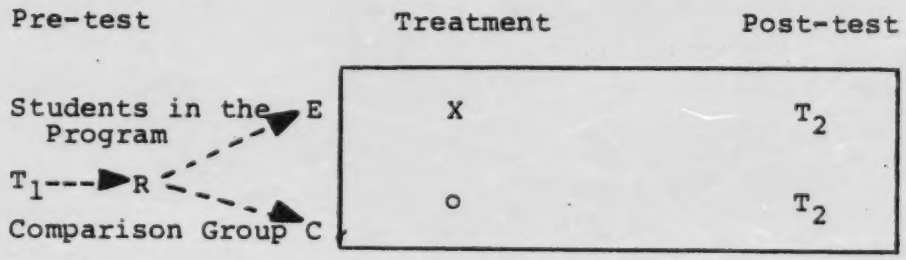
- o teacher training and experience
- o median family income
- o school average expenditure per student
- o ethnic composition
- o sex
- o grade level
- o age
- o etc.

The steps to follow in the use of this design are the same as those in Design 2 with the exception of steps one and two. In place of steps one and two, procedures for selection of a comparison group are included, since random assignment and selection is impossible at this point.

4. Post-test Comparison with Matched Groups

FIGURE 6

Post-test Comparison with Matched Groups



A variation of Design 3, and one briefly alluded to above, is the post-test comparison with matched groups. This design requires that students be paired in terms of a pre-test measure and that one member of each pair be randomly assigned to the treatment group and the other to the comparison group. This evaluation design theoretically gives the most accurate estimate of how the treatment group would have done had they not received the instructional program.

In this design the pre-test is used to match pairs of students and these pairs are subsequently assigned at random to the treatment and comparison groups.

Step 1: Identify a group of potential participants large enough in number to form both a treatment and a comparison group.

Step 2: Administer the pre-test to the entire group with an instrument known to correlate highly with the post-test measure.

Step 3: Using the raw scores, identify student pairs with identical or nearly identical scores. (Note: if pairings cannot be based on identical scores there is the possibility that the mean pre-test scores of the two groups may differ by amounts large enough to influence the evaluation outcome. If this difference is observed, covariance analysis should be used to adjust for these differences. This method is discussed in Design 5.)

Step 4: Randomly assign one member of each pair to the treatment group and the other to the comparison group (flip a coin, draw names from a hat, etc.)

Step 5: It is important to monitor the experience of these two groups over the treatment year. The experiences must be identical except that one group gets the treatment and the other does not.

Step 6: Administer the post-test to the groups at the same time.

Step 7: Calculate the following summary statistics:

the mean (M) and standard deviation (S) of post-test scores for the treatment group

the mean (M) and standard deviation (S) of post-test scores for the comparison group

the correlation between groups based on the original pairing of students

If one member of the pair is lost, the other member must be excluded from all of thes calculations.

Step 8: Compare the mean post-test scores of the two groups.

Step 9: If the treatment group score is greater than the comparison group score the project may have been effective. Apply the appropriate test of statistical significance (see Data Analysis section for further discussion of appropriate tests).

Note: Form 1 is suggested for use as a data record. You should be able to use it for most designs or modify it to suit your own needs.

A summary of the main features of the four designs is given in Figure 6.

Problems of Attrition/Dropouts and New Students

If you are able to randomly assign pupils, a mechanism must be identified to ensure that attrition during the year will not upset the design. As pupils leave your groups (transfer, move, etc.) you will be tempted to replace them with new entering students. However, this practice can change the entire climate of the class. One solution is to place all entering pupils in some other class not identified as either your special group or comparision group. Another solution, and one most likely to appeal to building administrators, would be to randomly distribute entering pupils throughout all classes.

Contamination Concerns

A major difficulty arises when comparison groups are used in the same school, in that the comparison group may become contaminated with ideas and practices of the treatment group. This is especially true in small schools where students are likely to know each other and have opportunities to discuss the instructional treatment and materials. Teachers also need to discuss and compare notes on how the special program is progressing. You may want to alert teachers to the reasons for the use of the experimental design you have chosen and the importance of not discussing materials and ideas, although some evaluation specialists feel that alerting teachers and students to these problems will, in the long run, cause more problems. This is a decision that must be shared by the person responsible for the evaluation, management and teachers.

Summary

Figure 7 summarizes the four basic evaluations presented. To fully understand which design can best be used, review the section on sampling. The Decision Matrix in Figure 10 page SA-8 will aid in selecting the appropriate design.

FIGURE 7

Evaluation Design Summary Chart

Name of Design	Control Group?	Random Assignment?	Pre-Test?
1. One group pre-test post-test	No	No	Yes
2. Randomized control group pre-test/ post-test	Yes	Yes	Yes
3. Non-randomized control group pre-test/post-test	Yes	No	Yes
4. Post-test comparison with matched groups	Yes	Yes	(for matching purposes only)

SAMPLING

A sample is made up of some of the students of a population selected for study. Sampling refers to the techniques and procedures involved in selecting students from a population. Sampling is really no more than drawing, from some population of possible students, subjects for the evaluation groups.

Overview

The primary purpose for sampling is to ensure that students in a program are as nearly as possible like other students from the population they represent. It does not take a statistician to see that an experimental program having only the top 5% of a class would not be representative of all the students in the class.

Other factors are

- o speed of conduct of the evaluation.
- o economy.
- o convenience.

If the intent of an evaluation is to characterize part or all of a large population, then sampling should be considered.

The Concept of Random Sampling

Any beginning statistics textbook will include an adequate discussion of various sampling techniques. Sampling involves complex ideas and entire books on the subject are available, and this section will not deal in depth with sampling concerns. It will give some practical suggestions that should enable an evaluator to address problems encountered in the evaluation of educational programs.

Random sampling is, essentially, selecting students in such a manner that all have an equal chance of being included in the selection of one student has no influence on the selection of another student.

Methods of sampling at random include drawing names from a hat, taking every tenth name from an alphabetical list after

selecting the starting place by random, or using a table of random numbers.

Typically, in an educational setting, students are enrolled in a program---let's say for our purposes, an EBCE program. It then becomes the task of the evaluator to construct a control group as nearly alike the program group as possible. If the evaluator is included in the initial planning stages of the program he may be able to use a random assignment method for determining treatment and control groups. Furthermore, sample size can be comparatively small and still provide accurate information.

Random Selection

A commonly used procedure in sampling is to select every tenth (or other convenient interval) name on a list after identifying the starting place by random means. If the first name is chosen randomly from among the first ten, every name has the same opportunity of being included in the sample. This method is easy and usually free of bias unless there are periodic features of the list that coincide with the sampling interval. Some ethnic surnames tend to group themselves in certain letters of the alphabet. In this instance one could under- or over-sample these groups.

A table of random numbers is a better procedure. In order to use the random number method, all the students in the pool need to be assigned a number. A table of random numbers is presented in Figure 8 for your convenience.

In order to use this table, two decisions need to be made:

- Decide if you are going to read the table vertically or horizontally.
- Arbitrarily select a starting point.

This starting point can be anywhere. Close your eyes and place your finger on the table. This number will be your starting point. Let us suppose our population has 250 students in it and you want to select 25 for the sample. You want to locate 25 numbers that fall in the range 1 to 250. You need read only the first three digits of the five digit number in the table. Numbers falling outside the range are ignored and the next set of five digit numbers are inspected (moving either horizontally or vertically depending on your initial decision). This procedure is repeated until 25 numbers are identified.

FIGURE 8

TABLE OF RANDOM NUMBERS

Row No.										
1	50691	91653	88574	08675	12700	32027	41034	56912	34264	77769
2	19787	66937	91769	13399	96096	43165	72096	86350	23062	99419
3	16746	77983	10861	23664	64557	78213	43857	68009	20483	00618
4	91039	16099	38824	00778	23058	76539	50584	71810	52589	32773
5	11075	62081	88977	78676	53855	56472	13090	01708	89016	45111
6	41230	92934	30342	29933	24597	72632	21727	63861	80454	47243
7	59028	24399	05075	64775	59803	45737	19025	46696	18914	03062
8	42957	25204	00753	60284	85483	34984	86637	95354	80698	98750
9	45881	59475	64445	98261	55252	50788	31295	16437	49497	22493
10	75104	45819	88471	75440	55309	63481	23616	64950	73291	10964
11	78614	07347	63528	84643	10455	95596	38158	75758	65628	10498
12	69276	59274	57459	53563	98241	18097	65297	49803	99145	25320
13	58626	91259	13832	75095	08333	53845	74223	82690	89320	89565
14	81630	00339	07996	65249	66792	05555	79169	12136	44621	95904
15	74330	13688	02044	65910	96007	82692	40473	56437	35671	95072
16	70829	66963	86390	26458	02385	41505	06239	68990	32915	89542
17	55084	58581	60759	20627	86682	76542	03648	38183	29823	68134
18	98845	17428	97397	62400	51284	92211	40593	82713	06067	46190
19	48116	91870	16346	97406	54649	42039	58407	84248	45780	60547
20	82778	31709	71564	26258	07522	03825	92087	21809	25678	39987
21	86615	67618	07446	63129	07111	70516	67289	09457	48995	08043
22	82558	99260	69136	35099	68187	85382	09569	94211	57824	98100
23	08290	70291	74090	96503	56140	27794	27765	51740	07712	29816
24	05062	76310	81603	86828	68370	46001	79205	35511	91239	52961
25	30361	66712	86801	29556	91232	98295	87322	99172	50009	27224
26	17390	96107	70391	78715	61943	33315	39778	97149	08122	86388
27	05390	33046	63920	28733	42644	38972	98161	79861	88282	28279
28	06624	21114	33869	20940	03732	39973	89948	81060	36381	06027
29	38146	77295	33742	00135	26587	54775	94846	18587	39327	71711
30	76430	28645	62335	60393	71813	52677	09917	89100	93855	75317
31	16664	30164	22546	63538	79376	26865	61995	60418	37777	84170
32	56424	64680	81038	79364	23815	44002	38380	09864	35950	10760
33	95954	15540	18554	63349	70259	03212	91950	16214	80378	56421
34	59007	56364	49965	61970	32493	55404	85950	99606	46328	17887
35	19341	87208	99853	40202	08553	78731	83463	19524	82512	13556
36	24505	87007	35748	54865	40209	49466	94574	31406	64422	87185
37	15086	92183	84632	36790	59608	00371	67456	55361	80669	75402
38	65664	02188	09164	70939	25856	24344	58859	10454	19212	59078
39	40397	76835	14062	96067	70645	23695	59140	75812	18804	55529
40	31700	24753	22919	43207	83387	27820	12494	30041	88927	22668
41	14472	19372	23759	47166	81647	44946	97716	41157	30913	30842
42	18018	57089	98428	89075	77511	15194	69634	68269	52292	63404
43	16752	54266	76103	05268	41145	36100	73916	32462	01658	68565
44	47184	33660	96555	56656	18238	56888	29315	99813	47831	81395
45	93884	63945	06636	45545	29237	21040	43552	02749	19963	23709

Sampling Frame

The sampling frame is as complete a list as possible of all the students in the population of interest. Often the frame consists of identification numbers or names. After the frame has been defined, students are selected from it for inclusion. An example of a sampling frame format is shown in Figure 9.

Random Assignment

Following the sampling format are two random assignment ways to secure a control group for purposes of comparison. The first method is the preferred procedure.

Method I

Random Assignment of the EBCE Treatment to Students

Step 1: The project director identifies students wishing to enroll in the EBCE program.

Step 2: The director randomly assigns the EBCE treatment to the number of students desired. This can be done by:

a) assigning each student a number 1, 2, 3..etc.

b) writing the numbers on slips of paper and placing them in a container.

c) drawing out the number of slips corresponding to the number of EBCE slots to be filled.

d) The student represented by the number of the slip has been randomly assigned to the treatment.

e) Next, draw out the number of slips equal to the number of students assigned to the experimental (EBCE) group; the student represented by these numbered slips will be the control group.

f) You must get permission from parents to test all students included in the study.

Method II

Selection of Control Group from Students Not Requesting Admission into the Program.

This method of selecting a control group should be used only if there are not enough students volunteering for the EBCE program to develop treatment and control groups.

Step 1: Use only students from grade levels represented in the group of students in the EBCE program.

Step 2: From this group, divide the students into sections by grade level and sex and place them on the sampling frame. (You may want to use other factors such as G.P.A., etc.) See Figure 9.

Step 3: For each student in the treatment (EBCE) group, the project director should randomly assign a student with like factors to the control group. For example: The first student in the EBCE group is a male and in the 11th grade. The director would then go to the list of names for 11th grade males and draw one name from this list through random methods. (This could be done by using a table of random numbers or by pulling a number from a collection of numbered slips representing all students on the list.)

Step 4: Repeat the process until a Control Group student is assigned for every Experimental (EBCE) Group subject.

Step 5: You must get permission to test all students in the study. If for some reason you cannot secure permission for one or more of the Control Group students, replace that student, using the same assignment method as was used in the initial selection.

Several situations an evaluator could encounter regarding sampling and design are:

Situation 1: The EBCE program has slots for a certain number of students. Many more than can be accomodated apply to the program. If this is your situation, it should be a simple matter to assign numbers to these students, enter a table of random numbers and select both the treatment group and the control group in a random fashion.

Figure 9

SAMPLING FRAME

Grade Level	Female	GPA	Male	GPA
12	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. . . . n		1. 2. 3. 4. 5. 6. 7. 8. 9. 10. . . . n	
11	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. . . . n		1. 2. 3. 4. 5. 6. 7. 8. 9. 10. . . . n	
10	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. . . . n		1. 2. 3. 4. 5. 6. 7. 8. 9. 10. . . . n	

Those not assigned to either group would simply be dropped from consideration. Most likely you would be able to use all who applied in one of the groups. A randomized control group pre-test/post-test design should be used in this situation.

Situation 2: The EBCE program has slots for a certain number of students. Either the exact number apply or several less than required apply to the program. A control group from applicants is impossible to locate.

In this situation an evaluator is faced with constructing a control group from other students in the school district. Evaluation guidelines many times require any school implementating an EBCE program with state or federal money to make available a pool of students of the same sex and grade from which a control group can be formed.*

After the control group has been formed the evaluator must then determine whether the students are comparable on pre-test scores. If they are comparable, the post-test comparison with matched groups design can be used. If the student pre-test scores are not comparable, the covariance design must be used.

Situation 3: The EBCE program has already assigned students to the program. It is not feasible to find a control group.

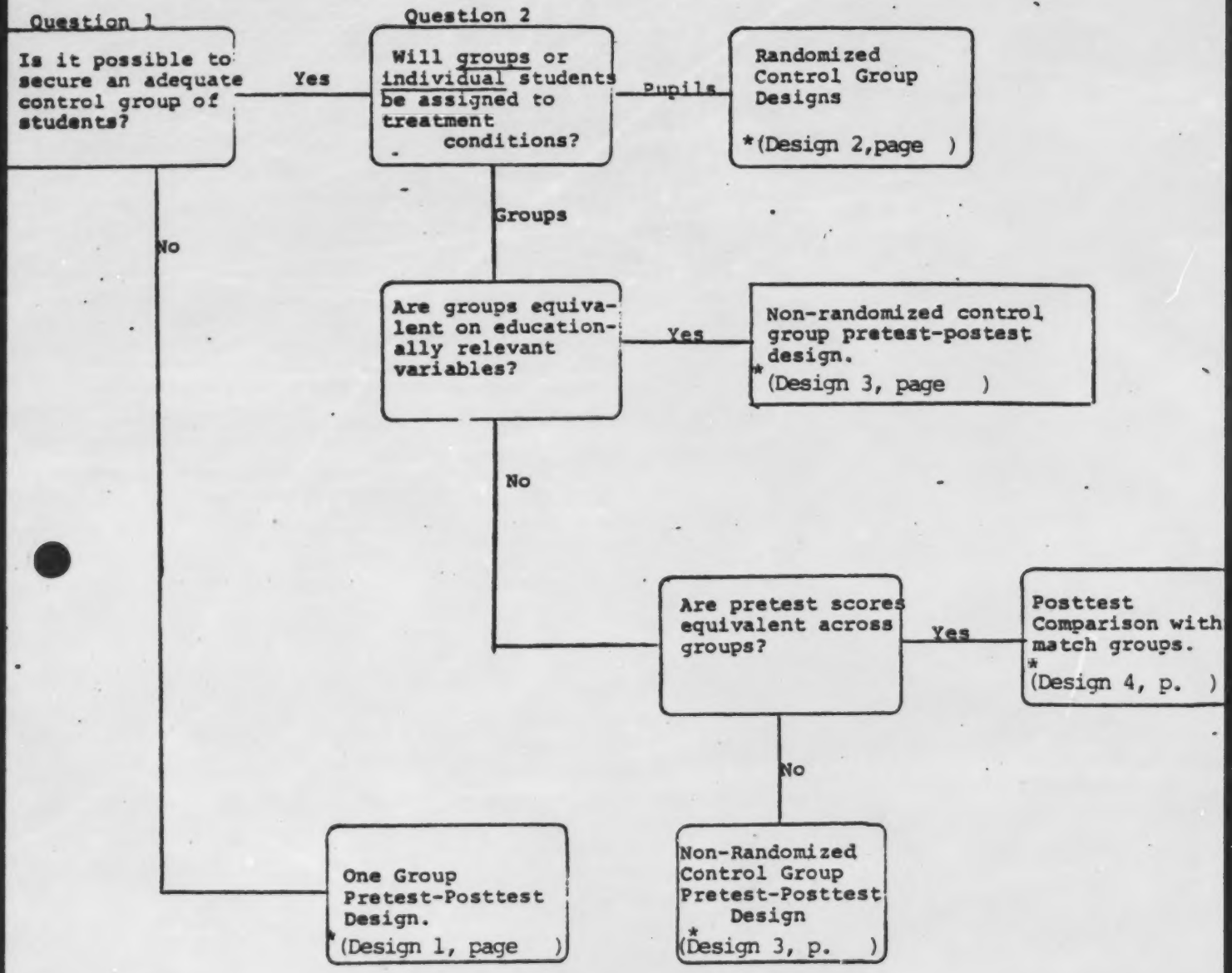
In this situation the evaluator is faced with not only a preassembled group but also with the inability to construct or find a control group. He/she is essentially limited to the one group pre-test/post-test comparison of means and the use of gain score analysis. Figure 10 depicts a decision matrix involving sampling concerns and selection of evaluation designs.

---

* For an excellent discussion of sampling theory consult Yamane, Taro, Elementary Sampling Theory. Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1977.

FIGURE 10

DECISION MATRIX OF EVALUATION DESIGNS



* Refer to page in the Section on Evaluation Design.

INSTRUMENTATION

By now it should be apparent that any effort to evaluate a project requires a great deal of planning. Careful selection and clarification of objectives must precede the selection of assessment instruments. A thorough understanding of the advantages and disadvantages of the instruments available and a knowledge of the kinds of scores they produce is essential to developing a plan of collection and analysis.

Overview

This section will focus on five basic types of instruments:

- Achievement tests
- Attitude scales
- Questionnaires
- Observations
- Logs (i.e., pupil, teacher, school records).

In this section the above types of instruments will be presented and examined so that you will gain knowledge of processes used to:

- match instruments to project goals and objectives.
- identify categories of evaluation instruments.
- identify types of scores available from instruments.

Two additional issues must be considered before specific instruments are selected: (1) the actual process of locating instruments that already exist versus developing instruments locally, and (2) some basic considerations common to all assessment instruments.

A brief discussion of increasingly popular criterion-referenced tests will also be presented. These tests are becoming increasingly available through commercial sources; however, many school districts have undertaken the somewhat complex and costly process of developing their own. For a small district this is not advisable without the assistance of

expert consultants and a considerable amount of money and legal time.

Areas Where Existing Instruments May Be Used

Experience-Based Career Education (EBCE), for the most part, contains two areas where existing instruments may be used. Basic Skills and Career Development Outcomes may be evaluated using existing instruments.

Considerations Basic to All Instruments

As an evaluator concerned with the selection of instruments that will best evaluate a project's objectives, you will need to obtain the following information:

- sources of instruments,
- standardization,
- reliability and validity.

Sources: Oscar Buros edits a series of books entitled Mental Measurements Yearbook which are updated periodically; the most recent being the Seventh Mental Measurements Yearbook. New Brunswick, New Jersey: Butgus University Press, 1972. Other sources of test evaluations are also available. The Center for the Study of Evaluation at the University of California at Los Angeles under the authorship of Hoepfuer Publishes the CSE - Research for Better Schools: Tests of Higher Order Cognitive, Affective and Interpersonal Skills.

PROJECT STAFF INSTRUMENT

1) How many students are presently enrolled? _____

2) How many students have dropped out of the program? _____ Explain why these students have dropped out. _____

3) How do you promote for the EECE Program to:

a) Students? _____

b) Faculty? _____

c) Community? _____

(Get copies of any promotional literature used.)

4) Are there legal or fair labor practices requirements the project must meet? Yes ___ No ___

Directions: Read stem and state each position.

5) Which of the following positions are part of your program staffing?

___ a) project director
___ b) learning manager
___ c) employer relations specialist
___ d) learning resource specialist
___ e) student coordinator
___ f) learning assistant
___ g) aides
___ h) others (list) _____

6) Who has responsibilities for? (Name and position)

a) Student recruitment _____
b) Employer development _____
c) Supervision of students in the community _____
d) Develop/monitor student projects _____
e) Develop/monitor exploratory and learning experiences _____
f) Survival skills/development of packets/arranging certification _____
g) Reading student journals _____
h) Making arrangements for facilities, supplies and equipment _____
i) Others (specify) _____

7) Do you have an Advisory Committee (get list of names, positions and minutes from meetings)?
___ Yes ___ No

a) If yes, what do they do? _____

b) How do you obtain and use community input? _____

c) Do you have community persons who serve as resource instructors and certifiers?
___ Yes ___ No If yes, how many? _____ Instructors
_____ Certifiers

8) How are the learning sites developed? _____

9) Are students paid for work performed while on a learning site? ___ Yes ___ No

10) Does the EBCE program credit substitute for the regular graduation requirements or is it treated as an elective credit? _____

Basic Skills

11) What type of instruction is directed at basic skill development? _____

12) How do you assess the students' progress in the area of basic skills? _____

13) Program Completion Requirements

Does your project have written program completion requirements that are clearly defined?
___ Yes ___ No

What are they? _____

14) Student evaluation

Detail the student evaluation process. Describe requirements, who sets the standards, to what extent the students are involved. _____

15) Classes

a) Are students allowed to take classes at the local high school? ___ Yes ___ No
Are students encouraged to take classes at the local high school? ___ Yes ___ No
At the community colleges or other institutions? ___ Yes ___ No

b) Approximately how many students, if any, are currently taking classes? _____

What types of classes? _____

16) Guidance

a) How is the guidance function handled? (Who is responsible for the various guidance outcomes?) _____

b) How is student progress assessed in the area of life skills and career development?

c) Do staff members conduct student staffing sessions regularly to discuss the progress of each student? ___ Yes ___ No

If no, how do staff share information about students? _____

17) Accountability System

Does your project use a student accountability system with clearly defined expectations and consequences? ___ Yes ___ No

Describe the system. _____

18) Student Program Planning Periods (Action Zones)

a) How many program planning periods do students use? _____

b) If you have planning periods, are they organized like those described (pp 81-84) in the Curriculum and Instruction Handbook? ___ Yes ___ No

Describe the student planning periods. _____

19) Learning Levels

How many learning levels have been completed? _____

Describe how learning levels are developed and evaluated. _____

20) Skill Building Level

a) Are skill building levels at employer business sites: (check all that apply)

___ 1) required of all students?
___ 2) required of some students?
___ 3) Available as options?

20) Continued

____ 4) Used differently than described (pp 277-327) in the Curriculum and Instruction Handbook?

If # 4 is checked, please explain the difference. _____

_____

_____

_____

b) If skill building levels are an intended part of your program have any students begun them yet? ____ Yes ____ No

If yes, describe the experience. _____

_____

_____

21) Special Placements

a) Are "special placements" of students at employer or community sites for Life Skills or Basic Skills an option within your program? ___ Yes ___ No

b) If "special placements" are a part of your program, have any students begun them yet? ___ Yes ___ No

List the types of materials available to students. _____

_____

_____

_____

_____

22) How are the employer seminars developed? _____

_____

_____

_____

a) Which topics have you covered? _____

_____

_____

_____

b) Specify: The number of seminars held _____

The number of seminars planned _____

23) Projects

a) How are student projects developed? _____

_____

_____

_____

_____

24) How are student career decision-making skills developed? _____

_____

_____

_____

_____

_____

REVISED

SUMMARY JUDGEMENT SHEET

Site Name: _____

Date: _____

Evaluation Team: _____

_____

_____

_____ Rating

1) EBCE is an Individualized Program:

A. Ongoing assessment of student needs, interests and abilities in Basic Skills, Life Skills and Career Development

1 . 5

1 There is no ongoing assessment in two or more of these areas.

5 Student needs, interests and abilities are continually assessed.

Comments: _____

_____

B. Participation in Evaluation.

1 . 5

1 Students play a passive role in the evaluation of their learning experiences.

5 Students play an active and involved role in the evaluation of their learning experiences.

Comments: _____

_____

C. Individual negotiation

1 . 5

1 All projects are pre-designed and not subject to negotiation:

5 All Ind-designed projects allow for negotiation between student and learning manager.

Comments: _____

_____

D. Student Evaluation

1 . 5

1 There is no formal, individual student evaluation.

5 Individual student evaluation is integrated into the learning plan when negotiated.

Comments: _____

_____

E. Accountability standards ("a set of learning and behavioral expectations for students as members of the EBCE 'community'")

1 . 5

1 There are few accountability standards / requirements.

5 The project uses a student accountability system with clearly defined expectations and consequences.

Comments: _____

_____

_____ Rating

II) EBCE is a Community-Based program.

A. Community input into program planning and operation

1 . 5

1 No mechanism currently exists.

5 A systematic mechanism exists for procuring and using community input

Comments: _____

_____

B. Role of the program advisory board

1 There is no program advisory board.
.
— 5 The program advisory board takes an active role by providing program input.

Comments: _____

_____

C. Community members and student learning

1 Community members are not involved in student learning activities.
.
— 5 Community members serve as resource instructors and certifiers of student learning.

Comments: _____

_____

D. Provision for employer instructor training / development activities (Seminars)

1 There are no employer seminars.
.
— 5 There are at least four, regularly-scheduled employer seminars.

Comments: _____

_____

Rating

III. EBCE is an Experience-Based program and is built from the career activity of adults

A. Mode of learning

1 Students are instructed in a passive or school-like mode.
.
— 5 Active, realistic lifelike learning activities are provided for students.

Comments: _____

_____

B. Student Activity

1 Students are assigned activities and schedules,or students have total responsibility for
. budgeting their time and managing their daily activities.
.
— 5 Students and staff work together to schedule time and manage programs for optimum learning.

Comments: _____

_____

C. Use of Resources

1 Secondary resources (textbooks, courses) are given priority.
.
— 5 Primary resources (people; institutions, such as libraries and museums; events) are given priority.

Comments: _____

_____

D. Community learning activities

1 Adult activities in the community are not used in student learning.
.
— 5 Adult activities in the community serve as a primary student learning strategy.

Comments: _____

_____

E. Community learning potential

1 No analysis is made of the learning potential of the local community.
.
.
5 There is systematic analysis that enables staff and students to take full advantage of the learning potential of the local community.

Comments: _____

_____

_____ IV EBCE must have its own Identity and must be Comprehensive and Integrated.
Rating

A. Program requirements and processes

1 Regular high school requirements and processes are used to determine student learning plans.
.
.
5 EBCE program requirements and processes determine student learning plans.

Comments: _____

_____

B. Program completion requirements

1 Program completion requirements are vague, unspecified or not differentiated from the regular high school requirements.
.
.
5 Program completion requirements are clearly defined, differentiated from and consistent with program goals and local requirements.

Comments: _____

_____

C. Curriculum

1 The curriculum structure includes experiences in one or more of the following areas: Basic Skills, Life Skills Projects, Career Development.
.
.
5 The curriculum structure includes experiences in all of the above areas.

Comments: _____

_____

D. Survival competencies

1 There are no performance-based survival competencies.
.
.
5 There are at least ten performance-based survival competencies necessary for coping in life and modern society.

Comments: _____

_____

E. Interrelatedness of curriculum areas and student learning

1 Disciplines are emphasized separately.
.
.
5 Emphasis is on interrelated curriculum areas, and this is demonstrated by the student learning activities.

Comments: _____

_____

_____ V. The EBCE program places a major emphasis on the Career Development of students.
Rating

A. Types of community learning situations

1 There are no employer / community learning sites.
.
.
5 Provision is made for different types and levels of learning situations at employer / community sites.

Comments: _____

_____

B. Career Decision Making

1 Students are not encouraged to improve their career decision-making process.

___ .

5 Students are required to gather information about themselves and the world of work and apply this information in career decision-making.

Comments: _____

_____

C. Reflections on student experiences

1 There are no requirements towards self-evaluation.

___ .

5 Students are encouraged to reflect on student experiences and evaluate their own strengths, weaknesses and progress.

Comments: _____

_____

_____ VI. Facilities

Rating

A. Staff Facilities

1 The staff facilities are minimal and combined with student faculty.

___ .

5 Separate / private staff and student facilities are available.

Comments: _____

_____

B. Student Facilities

1 No individualized study and storage areas exist.

___ .

5 Students are provided with individual study areas.

Comments: _____

_____

C. Resources

1 Few resources / materials available within the learning center.

___ .

5 A large variety of appropriate resources are related to student needs, available in the learning center.

Comments: _____

_____

D. Social Area

1 There is no area available where students can socialize.

___ .

5 Areas are designated for social use.

Comments: _____

_____

_____ VI. Program Support

Rating

A. Faculty

1 Faculty are not aware of the intent of the EBCE project and do not support the program.

___ .

5 Faculty understands the basic concepts and activities of EBCE and are in agreement with the program.

Comments: _____

_____

B. Administration

1 Administrators are not aware of the intent of the EBCE project and do not support the program.

___ : 5 Administrators understand the basic concepts and activities of EBCE and are in agreement with the program.

Comments: _____

_____

C. Financial

1 There are no plans for further funding of the program.

___ : 5 The school district plans to fund the EBCE program.

Comments: _____

_____

D. Community

1 Community is not aware of the intent of the EBCE project and does not support the program.

___ : 5 Community understands the basic concepts and activities of EBCE and is in agreement with the program.

Comments: _____

_____

Rating VII. Management

A. Job Descriptions (Roles)

1 No job description or roles are provided to program staff.

___ : 5 Job descriptions (roles) are clearly defined and in possession of each staff member.

Comments: _____

_____

B. Staff Dynamics

1 Obvious friction is evident between EBCE staff members.

___ : 5 A harmonious, cooperative relationship exists between EBCE staff members.

Comments: _____

_____

PROJECT REVIEW SHEET

Instructions: The intent of this instrument is to provide structure to the process of reviewing and/or making judgements regarding the quality, quantity and adequacy of student projects. Generally, this sheet should be used as the evaluator selects several projects (both predesigned and individualized) for review.

1) Number of Projects:

a) Number of predesigned projects: _____
(list titles of projects)
_____
_____
_____
_____
_____

b) Number of individualized projects: _____

Summarize the type of projects students are generally completing. Note any emphasis or specific areas.

_____
_____
_____
_____

2) Objectives for the projects

a) Predesigned project objectives are clearly defined. ____ Yes ____ No

b) Individualized project objectives are clearly defined. ____ Yes ____ No

3) Types of resources

a) Describe briefly the types of resources used in the predesigned projects.

_____
_____
_____

b) Briefly describe the types of resources used in the individualized projects.

_____
_____
_____

4) Evaluation

Briefly describe how projects are evaluated. _____
_____
_____
_____

5) Rate the overall quality of the projects. _____ Needs Improvement

_____ Adequate

_____ Excellent Projects

STUDENT INTERVIEW

Name _____ Grade _____

Sex M ___ F ___ Age _____

I. 1) When and how did you first hear about the Career Education Program? _____

_____

_____

_____

_____

2) Can you take other high school classes? (allowed or encouraged)? ___ Yes ___ No ___ Encouraged

3) Have you or have you not taken classes? ___ Yes ___ No

If yes, which ones? _____

_____

4) Do you participate in extra curricular activities? ___ Yes ___ No

If yes, what are they? _____

_____

5) Name the persons who have helped you in any way with EBCE

	Name
___ Employer's Relations Specialist	_____
___ Employer Instructor	_____
___ Learning Manager	_____
___ Learning Resource Specialist	_____
___ Competency Certifier	_____
___ Parents	_____
___ Others (specify)	_____

6) Are there rules of conduct you are required to follow in the classroom and/or in the community? (such as attendance, dress codes, etc.)

___ Yes ___ No

Give some examples: _____

_____

_____

II. Student Planning Periods (Action Zones).

> Program planning periods are time periods designed to help the student organize work and give target dates. In each period you would list goals to accomplish, tasks (i.e., do one exploration, hand in journal, begin a certain project) etc.

7) Do you use planning periods? ___ Yes ___ No

8) Which of the following would best describe the length (term) of time planned? (Note: more than one category may be checked)

___ Weekly
___ Quarterly
___ Yearly
___ Long Range (2-5 years)

9) To what extent are these planning periods helpful? ___Not Helpful; ___ Some help ___; A lot of help .

How do you determine which basic skills, life skills and career development topics you will study?

_____

_____

_____

III. Explorations

11) How many explorations are you required to complete? _____

Who selects your exploration topics? EBCE Staff ____ ____

Student _____

Student and Staff _____

Others (specify) _____

12) How many explorations have you completed to date? _____

13) About how many hours do you spend on an exploration? _____

Exploration package: A written booklet (report) with questions and guides to help students organize and better understand site experiences.

14) Are you required to complete an exploration booklet? ___ Yes ___ No

Are the exploration booklets helpful? ___ Not at All ___ Somewhat ___ A Lot

Learning levels: Gives the student the opportunity to spend more time at a site and experience more (in depth) extensive learning activities.

15) Are learning level experiences required? ___ Yes ___ No

If yes, how many learning level experiences are required? _____

16) Have you completed any learning level activities? ___ Yes ___ No

Started any? List them: _____

_____

_____

17) Do you have the opportunity to do extra exploratory experiences instead of learning levels? ___ Yes ___ No

If yes, how and what? _____

_____

_____

18) Briefly describe how you are evaluated on the explorations you complete. (What do you have to do to get an "A" grade?) _____

_____

_____

IV. Student Journals

19) Are you required to keep student journals? ___ Yes ___ No

20) How often are you required to write in your journal? _____

21) What would you say is the most important purpose or reason for keeping your journal? _____

_____

(read choices)

____ Analyzing and integration (using) Career Awareness information

____ Developing communication skills

____ Helping students know themselves better

____ To help express your feelings

____ Developing a trust relationship with an adult (which adult) _____

22) a) How often does the learning manager read your journal? _____

b) Does he respond in writing or verbally? _____

23) To what extent do you feel the journal is valuable? (read) __ Not at all __ Some __ A Lot

24) Briefly describe how you are evaluated on your journals. _____

_____

_____

_____

V. Employer Seminar

Employer Seminar: Meetings where students, employers, and other community people discuss career development topics.

25) Are employer seminars required? _____ Or optional? _____

If yes to either:

a) How many employer seminars have been offered? _____

b) How many have been attended? _____

c) Are you required to prepare for the seminar? ___ Yes ___ No

d) Are you required to do a report after the seminar? ___ Yes ___ No

e) Do you receive academic credit for attening the seminars? ___ Yes ___ No

Comments: _____

_____

_____

26) To what extent do you find employers seminars helpful?(Read) __ Not at All ___ Some ___ A Lot ___

27) Briefly describe how you are evaluated on your participation in the employer seminars. _____

_____

_____

VI. Basic Skills

28) To what extent do you need instruction in the following areas?

a) Reading	___ none needed	___ some needed	___ a lot needed
b) Math	___ none needed	___ some needed	___ a lot needed
c) Spelling	___ none needed	___ some needed	___ a lot needed
d) Writing	___ none needed	___ some needed	___ a lot needed

29) To what extent do you feel your needs in the following areas are being met?

a) Reading	___ needs are not met	___ needs are somewhat met	___ needs are met
b) Math	___ needs are not met	___ needs are somewhat met	___ needs are met
c) Spelling	___ needs are not met	___ needs are somewhat met	___ needs are met
d) Writing	___ needs are not met	___ needs are somewhat met	___ needs are met

VI. Survival Skills

Competencies (survival skills) are those skills and tasks necessary in order to function effectively in your community as an adult.

30) Are you required to complete a certain number of survival skill competencies? ___ Yes ___ No

If yes, how many? _____

31) a) Who works with you on completing the skills? _____

b) Who certifies that you have acquired the skill? _____

32) Describe how you are evaluated on the survival skills you complete. _____

_____

_____

VII. Student Projects

> Student projects would include activities to help you learn about an area of interest or to help you achieve a special goal. Examples include, independent studies from other teachers, special reports, and visits to the community.

33) How many projects are you expected to complete? _____

34) Do you have pre-assigned projects? ___ Yes ___ No

If yes, how many and what are they? _____

_____

_____

35) On individually prepared student projects, who generally:

	Student	Teacher	Both
a) selects the topic	____	____	____
b) determines the objectives and activities	____	____	____
c) evaluates the results	____	____	____

36) To what extent has the project been helpful to you? (read)

Not at All ___ Some ___ A Lot ___

37) Describe how you are evaluated on the projects you complete. _____

_____

_____

VIII. Decision-Making Processes

38) Describe the process you go through to decide careers in which you are interested. _____

_____

_____

(Interviewer, check areas that apply)

_____ ability
_____ availability
_____ salary (wages)
_____ location
_____ interest
_____ other (specify) _____

IX. Specific Curriculum Materials

(39) What type of material do you use in your EBCE studies? Where is the material located? Who would you ask to help you locate these materials?

Type	Location
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

40) Generally, how do you feel about the EBCE program now that you have been in it for a while?

_____

_____

_____

_____

X. Project Progress

Record the student's progress on projects.
(List each project completed and/or initiated) by checking the students file)

41)

Completed	Initiated	Project
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

XI. Check student's progress chart or records to varify this question

42) Name the competencies (survival skills) required and available in your EBCE program.

Student's Progress	Varify Progress	
_____	_____	Transact business on a credit basis
_____	_____	Maintain a checking account in good order
_____	_____	Provide adequate insurance for self, family and possessions
_____	_____	File state and federal income taxes
_____	_____	Budget time and money effectively
_____	_____	Maintain the best physical health and make appropriate use of leisure time
_____	_____	Respond appropriately to fire, police, a physical health emergency
_____	_____	Participate in the electoral process
_____	_____	Understand the basic structure and function of local, state and federal government
_____	_____	Explain own legal rights and responsibilities
_____	_____	Make appropriate use of public agencies
_____	_____	Make application for employment and successfully hold a job
_____	_____	Operate and maintain an automobile
_____	_____	Others (list) _____
		_____
		_____

43) Review student folder for G.P.A. and other information

In this section look for documentation that student needs are assessed, G.P.A., type of student, etc.

_____

_____

_____

_____

_____

_____

FACULTY INTERVIEW SURVEY

1) In what ways are you involved with the Experience-Based Career Education Program? _____

2) Do you feel that the EBCE program is a good program? ("Good" is defined as that which the student would receive in the regular school program)

3) Are there any particular strengths or weaknesses of the EBCE program you would care to mention?

4) What do you think of the students who are presently involved with the program? _____

5) Do you feel that EBCE students are getting a quality education? Why or why not? (Quality is defined as the same as that which a student would receive in the regular high school program).

6) Has the program had any adverse and/or positive effects on the regular high school program? (describe)

7) Does the EBCE program receive support from other faculty in the school? (If yes, in what way?) (If no, what are the problems?)

ADMINISTRATORS INTERVIEW

(Suggested questions one might ask)

1) In general, does the EBCE program receive support from the administration? (In what way?)

2) Are plans being made to finance the EBCE Program with other than federal dollars by the start of 1979-80 school year? (What are they?)

3) Do you feel EBCE students are getting a quality education? Why or why not?

4) What do you see as the greatest strengths of the EBCE program?

5) What do you see as the greatest weaknesses of the EBCE program?

6) Has the EBCE program had any adverse and/or positive effects on the regular high school program? (Describe)

7) Does the EBCE program receive support from faculty in the high school? (If yes, in what way?)

EBCE EMPLOYER SURVEY

(To be completed by interviewer prior to interview)

Site _____

Your name _____

Title _____

Name Of Company / Organization _____

Type of Company / Oragnization _____

Number of Students Visiting this Site: Exploratory ____ Learning Levels ____

1) Approximate number of employees at your site: _____

2) How long have you participated in the EBCE Program? _____

3) Who works with the EBCE students while they visit your business?

   a) _____

   b) _____

   c) _____

4) How many hours per week do you typically spend with the EBCE students who were visiting your business?

   _____

5) Describe what you do with and for the student while he/she visits your business? (personal counseling, tutoring, evaluation)

   _____

   _____

   _____

6) Has the program staff provided you with enough information to help you direct student activities at your business?

   a) Yes Why? _____

   b) No _____

7) Would you recommend to another business person or resource person that he/she also become involved with the EBCE program?

   a) Yes Why? _____

   b) No _____

8) In general, do you think the EBCE students you have worked with are interested in your line of business?

   Yes ___ No ___ Somewhat ___ Comments: _____

   _____

9) Do you receive adequate feedback about what happens to the EBCE students after they leave your business?

   Yes ___ No ___ Comments: _____

   _____

   If no, what information would you like? _____

   _____

10) How have employees at your site reacted to participation in the EBCE program? (Record comments)

   Comments: _____

   _____

(Interviewer make judgements)

____ Positive reaction ____ No reaction ____ Mixed reaction

____ Negative reaction ____ Not applicable ____ Don't know

11) In what ways (if any) have the employees at your site benefited? (record comments)

Comments: _____

_____

(Interviewer make judgements)

_____ They havn't benefited
_____ Increased their awareness of youth
_____ Motivated the regular employees to further training
_____ Reduced their workload
_____ Increased interest in their own work
_____ I don't know
_____ Other (please write in) _____

_____

12) Do you plan to continue participating in the program next year? Why or why not?

___ Yes ___ No ___ Don't know

Comments: _____

_____

(Interviewer check one or more reasons below)

a) ___ Program is worthwhile
b) ___ I like the people involved
c) ___ My participation is a community service
d) ___ It is challenging to me
e) ___ I have had problems with the staff
f) ___ I have had problems with the students
g) ___ The program is not effective
h) ___ I don't have time
i) ___ Other (please write in) _____

_____

13) What do you think are the greatest strengths of the program?

Comments: _____

_____

_____

(Interviewer check those that apply)

a) ___ Good alternative to regular high school program
b) ___ Quality of the staff
c) ___ Students learn about a variety of careers
d) ___ Students learn about real life situations
e) ___ Good way of getting students to learn
f) ___ Experience in working with adults
g) ___ Other (please write in) _____

14) What do you think are the greatest weaknesses of the program?

Comments: _____

_____

_____

(Interviewer check one or more that apply)

a) ___ Some students can't handle the freedom
b) ___ Problems in the organization of the program
c) ___ Students not receiving sufficient training

14) Continued

d) ____ Inadequate supervision of students on job sites
e) ____ Too much paperwork
f) ____ Other (please write in) _____

_____

15) How many students would you be willing to handle at one time? _____

16) What do you feel students are able to learn on job sites that they do not learn as well in a regular school classroom?

Comments: _____

_____

_____

_____

(Interviewer check one or more)

a) ____ First hand knowledge of demands in a real world
b) ____ Working with other people
c) ____ On the job skills
d) ____ Self-Discipline
e) ____ Motivation to learn
f) ____ Nothing
g) ____ Other (please write in) _____

_____

17) What other comments or recommendations about the program would you like to make? _____

_____

_____

_____

_____

_____

_____

18) Thank the employer for his/her time.

DATA COLLECTION

Unless care is taken in the data collection process, the most carefully thought-out evaluation design can be destroyed This aspect of evaluation is not the most glamorous. Compared to the other processes of evaluation, data collection seems almost mechanical and is often, unfortunately, delegated to someone without the proper training.

Overview

Data collection is more than just testing students before and after the program. Any data collection plan must take into account many logistical problems. Collection schedules, timelines and training for data collectors must be developed and implemented. Materials need to be ordered and delivered to the proper schools at the proper time. This section presents suggestions for completing a data collection plan.

Some Important Considerations

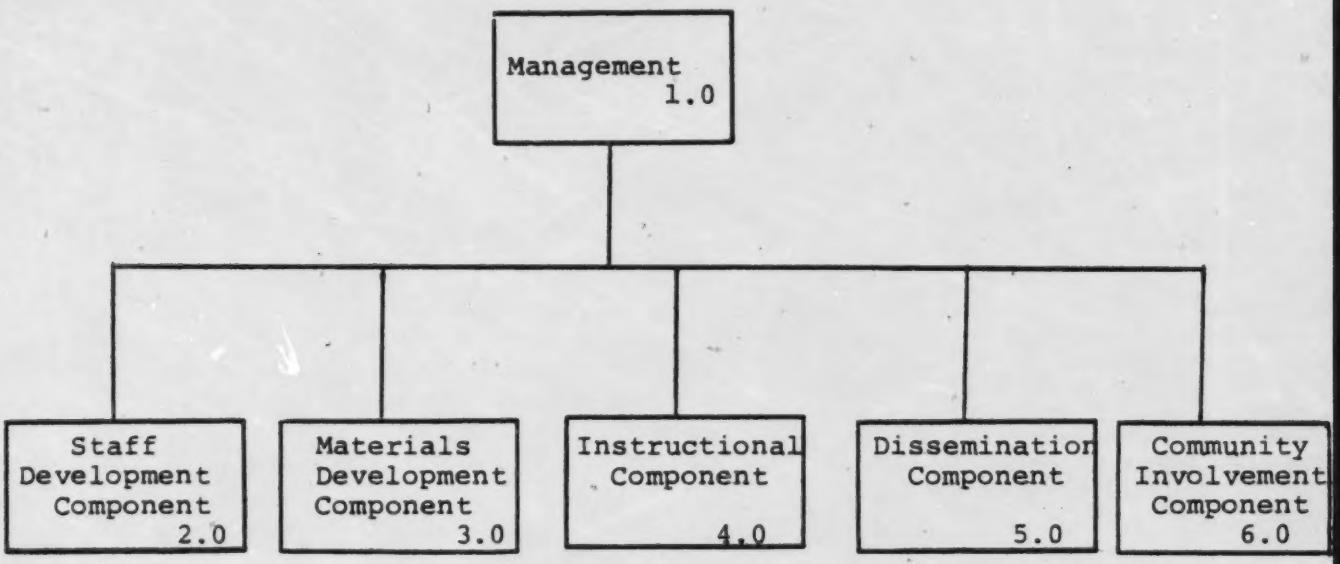
Prior to planning a data collection effort, complete the following steps:

- Contact the State Department of Education's Division of Planning, Evaluation and Information Services for information.
- Make arrangements for school personnel.
- Identify the people from whom data will be collected.
- Train personnel who will collect data.
- Develop timelines.
- Develop data collection monitoring.

Since the type of evaluation being addressed in this handbook is based on behavioral or performance objectives, all data should be related to an outcome (student, teacher, community, etc.) or product objective. A product evaluation using the designs in this handbook will be organized around the components of the project. Sample components may be viewed in Figure 11.

FIGURE 11

Organizational Components



Other components may be added as they are identified.

Steps in Planning a Data Collection Effort

Various formats may be developed to assist you in planning a data collection effort. One of these is shown in Form 2; this evaluation data matrix may be adapted to suit the needs of local districts. For example, if there is only one person responsible for evaluation, this section may be deleted. However, more than likely several people will be involved in the administration of pre- and post-tests.

Steps for Completing Evaluation Data Matrix

Step 1: Write the name of the component being evaluated in the space provided, along with the title of the project. (You can get the components from your Management Plan; see Implementation Handbook.)

FORM

FORM 2

EVALUATION DATA MATRIX

COMPONENT: _____

PROJECT: _____

OBJECTIVES 1	Evaluation Technique 2	Criterion Measure(s) 3	Data Collection Dates 4	Person Responsible 5	Data Reduction Procedures 6	Data Analysis 7	Data Reporting 8	Person Responsible 9

DC-3

Step 2: Write, in column 1 under Objectives, all the objectives for the component being evaluated.

Step 3: In column 2, Evaluation Technique, (e.g., site visit, testing, survey, etc.) list the technique you will use to evaluate the objective. If you are using a pre-test/post-test design, show the pre-test and post-test separately, because dates for each will need to be filled in later. Other techniques could involve instructor observation, evaluation file review, on-site visit, etc.

Step 4: In the column labeled Criterion Measure, write the name of the standardized or criterion-referenced test (CTBS, Student Attitude Questionnaire, etc.).

Step 5: In column 4 indicate the dates (month, day and year) that the pre-testing, post-testing or other evaluation will take place. These data, along with the activities, will later become part of a timeline that will enable the evaluator to lay out a yearly schedule.

Step 6: In column 5 list the title of the person responsible for data collection. Also, in parentheses, write the name of the individual occupying the position.

Step 7: In Data Reduction Procedures, column 6, write the kinds of procedures you will perform to reduce the data into managable form (score tests, count data, see Data Analysis Section).

Step 8: In Data Analysis, column 7, indicate the types of statistics (mean, median, mode, standard deviation, t tests, etc.) that will be calculated.

Step 9: In column 8 indicate the type of report to be compiled using the data (Final Report, Brief Accomplishment Report, Interim Report, Quarterly Report, etc.).

Step 10: In column 9 write the title of the person responsible for the activities listed in columns 6-8.

Preparation of Timeline

Certain activities attach themselves to the evaluation of specific objectives. For example, in evaluating learner

outcomes via pre- and post-testing, tests need to be selected, purchased and administered at various times during the year. Form 3 may be used to list the objectives and activities associated with these objectives as follows:

Step 1: Under Activities/Objectives, column 1, write the objective being evaluated. After the objective has been written, list all process activities associated with the objective.

Step 2: From columns 4 and 6 of Form 3, Evaluation Data Matrix, determine the month the activity is to begin and when it is to be completed. Using the key at the bottom of the form, indicate anticipated beginning and completion dates of all activities.

The completed timeline will depict an overall month-by-month review of activities when completed. These timelines may also be developed for each staff member as well as for all collection activities and procedures.

FORM

DATA COLLECTION TIMELINE

FORM 3 Month

ACTIVITIES/OBJECTIVES	197_							197_													COMMENTS
	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D		

DC-6

71

KEY: ○ Begin Activity

△ Complete Activity

72

DATA ANALYSIS

Data analysis should be considered during the evaluation planning, since any analysis to be performed is dictated by the evaluation design. The analysis of any set of data can be a time-consuming activity if not properly planned.

Overview

Detailed discussions of complex statistical analysis of variance, analysis of covariance, and multiple regression analysis is beyond the scope of this handbook; however, any individual who has completed an elementary statistics course should be able to apply the statistics necessary to conduct the analysis called for in the designs outlined in previous sections of the handbook with the exception of covariance design. Persons desiring to use the covariance designs should review the texts by McNemar and Winer sited at the end of Evaluation Design section and should consult a statistician.

General Types of Statistical Computations

There is a difference between descriptive and inferential statistics. Briefly, descriptive statistics are simply numbers that describe a set of data. "Mean", "median", "mode", and "standard deviation" are statistical terms used in descriptive settings as well as other more complex situations. Inferential statistics enable one to test hypotheses and make inferences about the effectiveness of a project. Tests of statistical inference allow an evaluator to separate real improvement made by pupils from random variation in test scores. Many of these tests of statistical inference assume that scores are normally distributed (bell-shaped curve).

The evaluator should plan to obtain descriptive statistics for all the data collected. Obtaining these statistics involves compiling scores (number correct on tests, responses from questionnaires, etc.) and reducing this raw data into some form that can be understood by decision-makers.

Figure 12 outlines the procedural steps involved in calculating the mean, standard deviation, median and mode.

Mechanics of Analysis

The following steps should be followed as a part of preliminary analysis and screening procedures.

For students having both pre- and post-test scores:

Step 1: Compute the mean and standard deviation for the pre-test raw scores. Also plot the distribution of these raw scores.

Step 2: Compute the mean and standard deviation for the post-test raw scores, and plot the distribution of these raw scores.

For the most part, the gains in achievement, etc. will be shown by the preliminary analysis. Later the differences between mean pre-test and post-test scores will be tested statistically in the evaluation models discussed above. Also, the difference between Experimental and Control groups post-test scores can be analyzed by means of a t-test.

Irregularities in Data

The plotted distributions will allow you to inspect the data for irregularities which may later affect interpretation. Several frequently occurring irregularities are discussed below.

Low Correlation Between Pre- and Post-test Scores:

Usually low correlations indicate the pre-test is measuring something different than the post-test. With standardized tests correlations of .80 to .90 are common. As the correlations drop, so do the preciseness of results.

Ceiling and Floor Effects:

Situations arise where most of the students tested may get nearly all or very few of the test items correct. This means the test is clearly inappropriate for determining achievement status. Ideally, students tested should score in the middle range of possible raw scores. If a student encounters the test "floor" it means the test is too easy. By inspecting the plotted distributions you should be able to see where the scores "bunch" up. If bunching occurs at the higher end of the raw scores, then the test is too easy; if at the lower end of the raw scores, the test is too difficult.

Large Changes in Standard Deviations from Pre-test to Post-test:

If there is a large increase in standard deviation, it probably means the treatment is spreading the students out by helping the initially better students more than the others. A decrease probably means initially low scoring students are helped more than high scoring students. Either situation would be an important finding and should be pointed out in any evaluation report on the project.

Differences between Pre-tested Students Who Took the Post-test and Those Who Didn't:

If students who have only pre-test scores appear to be much different on the pre-test from those who took both the pre-test and post-test, some study is required. Many explanations are possible:

- o Better students may leave the project, or
- o Poor students may drop out or
- o Both.

When better students are missing from the post-test, the overall mean will be depressed. If poorer students are missing, the overall mean will be inflated.

Computational Guides

How to Compute a t-test to Determine Statistical Significance of Gain Scores (Correlated Means)[1]. Further analysis, such as t-test analysis of covariance, refer to reference.

---

[1] If you do not have some statistical background this section may be difficult because of its abbreviated presentation, and you are encouraged to consult a statistician.

MEAN — M

Arrange the raw scores in assending order.

To find the mean, sum the raw scores and divide by N, the number of cases.

$$M = \frac{\Sigma X}{N} = \frac{36}{6} = 6.00$$

X	d	d^2
10	4.0	16
8	2.0	4
6	0.0	0
5	-1.0	1
4	-2.0	4
3	-3.0	9
$\Sigma X=36$	$\Sigma d=0$	$\Sigma d^2=34$

MEDIAN — Md

To find the median if:

(a) N is odd - take the middle score since this would be the point at which half the scores fall above and half below.

(b) N is even - the median is taken as the arithmetic mean of the two middle values.

$$Md = \frac{6 + 5}{2} = 5.5$$

MODE — Mo

To find the mode simply find the one score that occurs most frequently. In the sample data no mode exists because all scores occur only once.

STANDARD DEVIATION — s

To find the standard deviation:

(a) subtract the mean from each raw score to obtain d, the deviation score.

$$X - M = d$$

(b) square each deviation score obtaining d^2.

(c) sum the squared deviations obtaining Σd^2.

$$\Sigma d^2 = 29.20$$

(d) obtain the standard deviation by extracting the square root of the sum of the squared deviations divided by N.

$$\sqrt{\frac{\Sigma d^2}{N}} = 2.38$$

(e) To calculate the variance simply square the standard deviation.

$$s^2 = \text{Variance} = (2.38)^2 = 5.65$$

PRODUCT MOMENT CORRELATION — r

To calculate the product moment correlation coefficient using raw scores:

(a) arrange pre-test and post-test data in pairs:

T_1	T_2	T_1^2	T_2^2	$T_1 \times T_2$
5	1	25	1	5
10	6	100	36	60
5	2	25	4	10
11	8	121	64	88
12	5	144	25	60
4	1	16	1	4
3	4	9	16	12
2	6	4	36	12
7	5	49	25	35
1	2	1	4	2
ΣT_1	ΣT_2	ΣT_1^2	ΣT_2^2	$\Sigma T_1 T_2$

=60 =40=494=212=288

(b) substitute the sums into the formula:

$$r = \frac{N\Sigma XY - \Sigma X \Sigma Y}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

$$= \frac{10 \times 288 - 60 \times 40}{(10 \times 494 - 60^2)(10 \times 212 - 40^2)}$$

$$= \frac{480}{\sqrt{1.340 \times 520}} = +.58$$

SITE REVIEW

This section provides information that will allow a local advisory committee or administrative group to evaluate a Career Education program using a "professional judgment" site review process. Instructions are included for the North West Regional Education Laboratory Experience-Based Career Education program. If other programs are to be evaluated, the instruments must be revised in light of the program objectives and processes.

Overview

The purpose of a site review is to provide program staff with information regarding the input the program is having on various populations. In general, the process consists of one or two days of intensive interviews with the various individuals affected by or involved in the program. There are three major activities involved in a site review:
1) pre-review preparation, 2) data collection and
3) judgments and recommendations.

It is important to note that site reviews should not be used exclusively to evaluate a program, because the data collected is usually subjective in nature and could result in a biased report. However, a site review can provide valuable insight into the effectiveness of the implementation of a Career Education program. In the main, the process directs observations to the extent the program has been implemented in light of a proposed model. There are, however, some judgments that may be made regarding the impact of the program upon students and others involved.

Pre-Review

The major concerns in the pre-review stage of the site review are to develop data collection instruments, schedule interviews, and organize an evaluation team. The following are suggested:

Step 1: Obtain and review the implementation plan for the program. Review any material that defines the processes to be implemented and the expected outcome.

Step 2: Define the key individuals to be interviewed and

identify the observations to be made for each individual. This can be done by asking:

- Who is involved in delivering the program? (parents, students, faculty, administrators, employers, others)
- Who is affected by the program?
- Who will be affected by changes in the program?
- Who should have a role in implementing the program?
- What key elements must exist in order to judge whether the program has been successfully implemented?
- What records describe the progress of the program?

The individuals or groups of individuals named in answer to the above questions should be considered candidates for interviews. In addition, records, files and reports identified should be reviewed to document progress of the program.

Step 3: After the key elements and individuals have been identified, instruments need to be developed to direct data collection efforts. Some rules to keep in mind when developing instruments are:

- All factual information should be collected from existing records if possible.
- Interviews can be used to varify the accuracy of the records.
- Do not ask questions of individuals that are not within their realm of experience.
- Do not ask for second-hand or hearsay information. (An example of this would be to ask students: what do you think employers think about the program?)
- Validate or confirm findings by asking more than one group about the same element of the program.

The instruments on pages through were designed for the NWREL Experience-Based Career Education program. There are forms that address several different groups.

Note: There is a summary judgment form that describes the key elements in the EBCE program on which the site review judgments are based.[1]

Step 4: Develop standards for performance. The instrument on pages to represent such standards. These can be developed by the project staff or may be described in the write-up of the program.

One of the statements in the example defines community-based education as an element to be considered. The instrument describes a community-based program. The review team, after collecting the needed data, will make judgments as to the extent to which the program was community-based. In short, standards represent what one expects if the program is operating correctly.

Step 5: Select the members of the evaluation team and familiarize them with the program and the evaluation assignment.

The members of the team should not have strong feelings either toward or against the program. There should be at least three members on the team and no more than seven members on a large program review team. If it is impossible to obtain objective evaluation team members, it may be wise to select the team members based on their biases to ensure that extreme points of view are represented. If this method is used, it is important to maintain a balance of perception among team members.

The following should be considered in the orientation of the evaluation team:

- A chairperson needs to be identified to coordinate the site reviews. This individual may or may not have been involved in team selection, instruments and standard development, scheduling or other aspects of the evaluation preparation.
- Responsibilities must be delegated to each member.
- Responsibility for report writing needs to be

[1] These instruments were adapted from instruments designed by the NWREL.

clarified. Generally, each evaluation team member will submit a report to the chairperson and then the chairperson will write the final report.

Step 6: Develop agenda for data collection, interviewing and reporting. An example of a schedule is given below:

Interviewer One:

8:30 Meets with project staff

9:30-12:00 Interviews the following students:
J. Smith
R. Adams
K. Michols
A. Covado

12:00-1:00 Lunch with evaluation team

1:00-2:30 Interviews students:
E. Shafer
B. Elliott
R. Jones
S. Sinky
B. Koeniger

2:30-4:30 Reviews records for each student

3:30-4:30 Meets with evaluation team to make judgments

4:30-5:30 Meets with program staff for exit review

Other members of the team would be interviewing administrators, faculty, employers and other involved people.

Figure 13 shows a complete Master Schedule used in the evaluation of a large program.

Data Collection

The next set of steps deal with the actual data collection process.

Step 7: Meet with program staff and administrator to review the purpose of the site review and the scheduled activities.

FIGURE 13

MASTER - SITE VISIT SCHEDULE

March 25, 1976

Time	Place	Subject to be Interviewed	Interviewer
7:30	Grant Jr. High	Robert McComas Principal Dan Matheson, Adm. Pam Ellsworth) Teachers Duncan Hopwood)	(1) (2) & (3)
8:00	Rishel Jr. High	Students (9)	(1),(2) &(3)
9:00	Skinner Jr. High	Students (9)	(1),(2) &(3)
10:05	Lake Jr. High	Students (9)	(1),(2) &(3)
11:00	Kepner Jr. High	Students (6)	(2) &(3)
11:00	Horace Mann Jr. High	Students (3)	(1)
11:45-12:15	Lunch - Kepner	---------	(2) &(3)
11:45-12:15	Lunch - Horace Mann	---------	(1)
12:15	Horace Mann Jr. High	Edward Stone Virginia Miyansoto	(1)
12:15	Skinner Jr. High	Tony DeCamillas) Teachers Robert Beck)	(2)
12:15	Horace Mann Jr. High	Natalie Wood) Teachers Wayne Kline)	(3)
1:15	Skinner Jr. High	Ms. Hudson, Adm. George Mathes, Principal	(1)
1:30	Lake Jr. High	Beth Turner) Teachers Phil Schriber)	(3)
1:30	Rishel Jr. High	Gene Beitler) Teachers Morris Farnan)	(2)
2:00	Lake Jr. High	Luke Terry Ms. Culbertson	(1)
2:30	Rishel Jr. High	Glendon Schultz,Principal Mrs. Long	(2)
2:30	Kepner Jr. High	Josephine Thomas) Teachers Larry Dardano)	(3)
2:30	Kepner Jr. High	Glen Leyden, Principal Mrs. Northway	(1)
3:30-4:15	Federal Project Office	Staff	(1),(2),& (3)

Step 8: Each evaluator collects data as planned.

Step 9: A mid-evaluation briefing should be held where members of the team can share experiences and impressions. At this time the team chairperson may want to make some changes in the data collection plans.

Judgments and Recommendations

The following set of steps deals with judgments and recommendations.

Step 10: The beginning of this process is an evaluation team debriefing session where each team member makes judgments in light of the standards based upon the information they have collected. These judgments are summarized by the team's chairperson.

Step 11: The evaluation team members, having rendered their judgment, must share the judgment(s) with the program staff and administrators in a formal staff debriefing. This session can be difficult to handle if the team has found many faults with the program. The team should always keep an open mind. If new data comes to light during the exit interview, judgments should be reconsidered in light of this data. The team should always be willing to consider errors of fact resulting from ommission of information or consideration of inaccurate information.

The team should not change their conclusions when they are challenged solely on the basis of judgment. The exit interview judgments are, or should be, tentative. This should be stated by the chairperson at the start of the meeting. The final judgments will be set forth in the final report.

Step 12: Writing the final report. Following is an example of a final report, which should contain the judgments made by the evaluators and the data collected in support of the judgments. Generally, the chairperson is the individual responsible for writing the report. Each member of the evaluation team may be given responsibilities for writing specific sections.

Summary

In summary, the site review process is intended to inspect the implementation of a program and to provide information for program improvement. There are three major activities one must complete:

1) pre-review preparation

2) data collection, and

3) judging and reporting.

This process can be very valuable to a program and should be looked upon as a constructive review.

SAMPLE SITE VISIT

A four-member evaluation team reviewed the Experience-Based Career Education (EBCE) Project funded under the Federal Vocational Education Act, Part D.

The evaluation was directed by evaluators from the Center for Education and Management (CEM) under contract with Wyoming State Department of Education. The State Coordinator for Career Education also participated in the site review.

The purposes of the site visit were to establish the extent to which the Northwest Regional Education Laboratory (NWREL) EBCE Model had been implemented at the site and to identify areas of project strength and weakness.

There are five major areas addressed in the site review: To what extent

1) is instruction individualized?
2) is the project community-based?
3) is the project experience-based and reliant upon adult activities?
4) does the project have its own identity and to what extent is the project comprehensive and integrated?
5) does the project emphasize career development of students?

The newness of the project has prevented project staff members from fully implementing the EBCE Model and has, therefore, prevented the evaluators from reviewing its total scope. It is hoped that next year the full model will be implemented.

Description of the Project

The EBCE Project is a first-year attempt at implementing the NWREL/EBCE Model. A detailed description of the NWREL/EBCE Model is available in the NWREL Handbooks for Experience-Based Career Education (Vols. 1-4).

The project was staffed by one half-time coordinator, one full-time learning manager, one full-time aide and one half-time aide serving (12) students. The project was implemented for second semester twelfth grade students as a pilot project in preparation for next year when selected students will be

involved in the alternative education treatment for a full year.

The project has been on-going for 14 weeks, and therefore, some of the curriculum elements had not been implemented. Furthermore, the project as modeled by NWREL requires a year of student commitment. This project will have but one semester of implementation this school year. Therefore, many of the more in-depth community and student experiences have not been implemented.

The facilities appeared satisfactory. The project coordinator's office is located within the district administration building. The learning manager and aide are housed with the project classroom, which is a converted store room. The Learning Center is stocked with various career information materials. The students have access to the lab from 8:00 to 3:00 p.m. daily and are rquired to sign in and out during hours of scheduled activity.

Procedures

Structured and unstructured interviews as well as structured response questionnaires were used to collect data from the project staff, school staff, students, administrators and employers. The instrumentation was developed by NWREL for review of its EBCE Model Project and included the "Implementation Site Essential Characteristics Checklist," the "NWREL EBCE Process Checklist," the "EBCE Staff Questionnaire" and the "EBCE Employer Opiniin Survey" (see Appendices).

All interviews were conducted by CEM Evaluators on April 21, 1977. The findings of the evaluators were reviewed by the state coordinator, site visit team member, project coordinator, learning manager, aide and a two-party federal site visit team prior to departure of the evaluation team from the site.

The following people were interviewed:

Students	(6)
Employers	(4)
School Staff (Associated with the project)	(4)
High School Counselors	(2)
Project Coordinator	(1)
Administrators	(1)

Findings

The evaluation team rating on the "Implementation Site Essential Characteristics Checklist" represents a summary of the data collected during the site visit.

Overall, the implementation of the NWREL Model appeared to be adequate. Communications and feedback among the project and employers, administrators, school staff support personnel and students were reviewed.

A) Individualized Program

The assessment of student needs was not always explicitly present. This was due in part to the integration of the basic skills into the other components of the curriculum.

The students' role was unclear in the assessment process. In some cases the students' desire to participate in an activity was the major if not the only criterion used for selecting activities.

There was one required student project; the remaining projects could be individualized and the scope and topic of these remaining projects were negotiated.

The evaluator found little evidence of student long-range planning. Limited use was made of the collected diagnostic information. The project staff was still waiting on the evaluation to deliver the CTBS test results.

The evaluation team felt the accountability system as described by the NWREL was not being fully implemented.

The following evaluation team ratings from the "Implementation Site Essential Characteristics Checklist" are presented for reader review:

I. EBCE is an Individualized program.

A. Ongoing assessment of student needs, interests and abilities in Basic Skills, Life Skills and Career Development

(1) There is no ongoing assessment in two or more of these areas.

(Rated at 4)

(5) Student needs, interests and abilities are continually assessed.

B. Participation in assessment

(1) Students play a passive role in the assessment process.

(Rated at 4) (5) Students play an active and involved role in the assessment process.

C. Individual negotiation

(1) All projects are pre-assigned and not subject to negotiation.

(Rated at 4) (5) All projects allow for negotiation between student and learning manager.

D. Integration

(1) There is no formalized, individual assessment and/or accountability.

(Rated at 3) (5) Individual assessment and accountability are integrated with program learning strategies when learning plans are negotiated.

E. Accountability standards ("a set of learning and behavioral expectations for students as members of EBCE 'community'")

(1) There are few accountability standards.

(Rated at 3) (5) Accountability standards give the student the necessary flexibility to meet basic program expectations.

B) Community Involvement

The evaluators felt the project had a good variety and volume of sites. However, there was no systematic mechanism for processing and using community input. Sites were selected in light of student interest.

The project had an advisory committee which had met twice. The evaluator did not review the committee meeting minutes. An in-school advisory staff was also used to obtain input from teachers and administrators.

There was no student representation on this committee. This committee has met once. Results of interviewing several teachers and administrators on the committee indicated it is non-functional at this time. Community members served as resource instructors and certifiers; employers, however, received very little direction and training, although there was an information packet for each employer involved in the program.

The following evaluation team ratings from the "Implementation Site Essential Characteristics Checklist" are presented for reader review:

II. EBCE is a Community-Based program.

A. Community input into program planning and operation

(1) No mechanism currently exists.

(Rated at 3) :

(5) A systematic mechanism exists for procuring and using community input.

B. Role of the program advisory board

(1) There is no program advisory board.

(Rated at 3) :

(5) The program advisory board takes an active role in direction of the program by providing program input.

C. Community members and student learning

(1) Community members are not involved in student learning activities.

(Rated at 5) . .

(5) Community members serving as resource instructors and certifiers of student learning.

D. Provision for employer instructor training/development activities

(1) There are no employer instructor training/development activities.

(Rated at 2) . .

(5) There are at least four regularly scheduled employer instructor training/development activities.

C) Career Activities

It was felt that for the most part students were instructed in an active, realistic and life-like manner. Students were responsible for budgeting their time. The staff monitored the students and approved schedules. It was apparent that the staff has control over most student activities. There was a good collection of materials available for student use in the learning center and in the library, but the materials in the library were not used much by students in the EBCE program. The program relied heavily upon community resources and a large portion of the program used adult community activities as the basis for instruction. The students appear to rely upon peer approval for support of their choice of activities. It was felt by the students that the Journals help establish a trusting adult relationship.

There was a lack of site analysis that left both the student and the employer without needed information and direction.

The following evaluation team ratings from the "Implementation Site Essential Characteristics Checklist" are presented below for reader review.

III. EBCE is an Experience-Based program and is built from the career activities of adults.

A. Mode of learning

(1) Students are instructed in a passive or school-like mode.

(Rated at 4)

.
.

(5) Active, realistic lifelike learning activities are provided for all students.

B. Student activity

(1) Students are assigned activities and schedules.

(Rated at 4)

.
.

(5) Students are responsibile for budgeting their time and managing their daily activities.

C. Use of resources

(1) Secondary resources (textbooks, courses)
. are given priority.
(Rated at 4) .
(5) Primary resources (people; institutions, such as libraries and museums; events) are given priority.

D. Community learning activities

(1) Adult activities in the community are not
. used in student learning.
(Rated at 4) .
(5) Adult activities in the community serve as the primary context for student learning.

E. Reference population

(1) Adolescent peers and school work are
. the primary referent.
(Rated at 3+) .
(5) Adults in the world of work are the primary referent.

F. Community learning potential

(1) No analysis is made of the learning potential of the local community.
(Rated at 2) .
(5) There is systematic analysis that enables staff and students to take full advantage of the learning potential of the local community.

D) Identify

The evaluator saw the completion requirements as being clearly defined. The student understood what was expected. Furthermore, the evaluator saw the program as defined by the type of credit given as an elective course, not as an alternative education program. The student had to meet all regular school requirements in order to graduate. The EBCE curriculum was implemented within the guidelines of the NWREL Model. The survival skills were performance-based. All suggested survival skills were available to the student. The student has

the option of testing out of a survival skill by getting 85% or higher on the pre-test. The total curriculum was well integrated and interrelated.

The following evaluation team rating from the "Implementation Site Essential Characteristics Checklist" are presented for reader review:

IV. EBCE must have its own identity and must be Comprehensive and Integrated.

A. Program requirements and processes

(Rated at 2)

(1) Regular high school requirements and processes are used to determine student learning plans.

(5) EBCE program requirements and processes determine learning plans.

B. Program completion requirements

(Rated at 4)

(1) Program completion requirements are vague, unspecified or not differentiated from the regular high school requirements.

(5) The curriculum structure includes experiences in all of the above areas.

C. Curriculum

(Rated at 4)

(1) The curriculum structure includes experiences in either one or none of the following areas: basic skills, life skills, career development.

(5) The curriculum structure includes experiences in all of the above areas.

D. Survival competencies

(Rated at 5)

(1) There are no performance-based survival competencies.

(5) There are at least ten performance-based survival competencies necessary for coping in life and modern society.

E. Interrelatedness of curriculum areas and student learning

(1) Disciplines are emphasized separately.

(Rated at 5)

(5) Emphasis is on interrelated curriculum areas and this is demonstrated by the student learning activities.

E) Career Development

There were a wide variety of community sites for student use. The students were involved in the program to learn and were not paid for their time spent with employers. The staff stated that if a student wished a skill building level, they would transfer the student to a cooperative education program. In this case, the students would then receive payment for their efforts.

The students were required to have several exploratory experiences; there was, however, little evidence the information gained was used explicitly for career decision-making. There appeared to be little building from experiences. The students reflected on their experiences and evaluated their own strengths and weaknesses. The students had only a low level of awareness of their self-evaluation activities.

Following are the evaluator's ratings:

V. The EBCE program places a major emphasis on the Career Development of students.

A. Types of community learning situations

(1) There are no employer/community learning sites.

(Rated at 5)

(5) Provision is made for different types and levels of learning situations at employer/community sites.

B. Emphasis at learning sites

(1) Students are paid for their contributions on employer/community sites.

(Rated at 5)

(5) Students are on employer/community sites to learn about careers, not to earn money.

C. Career Decision-Making

(Rated at 3)

(1) Students are not encouraged to improve their career decision-making process.

(5) Students are required to gather information about themselves and the world of work and apply this information in career decision-making.

D. Reflections on student experiences

(Rated at 4)

(1) There are no requirements toward self-evaluation.

(5) Students are encouraged to reflect on student experiences and evaluate their own strengths and weaknesses and progress.

F) Interviews

Administration

The building principal was interviewed as part of the site visit. He was informed about the project. He showed commitment to the concept; his son was enrolled in the project. He was aware of the need for facilities. The school has plans for an addition; many other programs were in need of space. He felt there was a commitment to keep the EBCE project after the "four years of funding" was completed.

The project for next year will again be offered as a one-semester course. The principal felt the project would not be implemented as an alternative education program until the third year. Overall, he was very positive and supportive of the project.

High School Counselors

The evaluator interviewed two counselors who have helped in the selection of students for the EBCE program by reviewing student graduation requirements. One counselor is on the staff advisory group; at this time the group is not active.

The counselor provides the same type of service for EBCE students as for the other students. This includes college counseling, personal counseling and scheduling.

Both counselors expressed positive attitudes toward the project.

Staff Associated with the Project

The evaluators interviewed four faculty, two of whom were on the Faculty Advisory Committee.

The faculty were aware the EBCE project existed but had no idea about its educational purposes. One thought it was another Vocational Cooperative Education Program. It was apparent that the faculty was not informed. The project staff indicated two teachers were working with EBCE students on student projects. The interviewer was not able to talk to either of these teachers.

The staff did chose not to complete the staff questionnaire because of their lack of information.

Students

Student interviews were held during morning and afternoon school hours at the EBCE High School. Twelve students, eight females and four males, were participating in the EBCE project. The high school grade point average, on a 4 = A to 0 = F scale, ranged from 1.67 to 3.4 with a mean score of 2.85. With one exception, all EBCE students had completed their high school graduation requirements before being allowed to participate in the EBCE Project. The one exception was allowed to take a history class necessary to complete high school graduation requirements and participate in EBCE concurrently. From this population, a total of six available students were interviewed, four females and two males. The results of these interviews are reflected in the following summary of data.

All students first heard about EBCE at a senior meeting held in late fall, 1976. One student also reported seeing posters at school.

Some student accountability expectations were clearly defined, but the student opinions varied as to possible consequences. All students said they were required to sign in and out, recording where they would be each hour of the school day.

All students were aware of due dates for Journals and other required written work. However, the students were varied on their opinions of the consequences for non-fulfillment of tasks. Some students reported they would receive lower grades, others felt they would receive a verbal warning and some said both. Student concern regarding consequences for non-fulfillment ranged from being very concerned about lower grades to little concern over verbal warnings. A third consequence, dismissal from the project, was used for two students prior to the on-site visit, indicating, from the students' point of view, only three of the 11 types of penalties as suggested on page 78 of the NWREL "Curriculum and Instruction Handbook" had been implemented.

Three professional staff positions consisted of a Project Coordinator, a Learning Manager and an Aide. All students indicated they had worked with each of the three staff members and all students reported the staff members to be helpful. All students seemed to have formed a sound, trusting relationship with the Learning Manager. From the students' point of view, the guidance function was implemented in a self-helping manner and appeared to be quite successful.

The student's involvement in the project varies directly with the number of high school classes; sometimes his project time is reduced, thus reducing the EBCE requirements. Students may take high school classes, but are not encouraged to do so. Five of the six students interviewed were taking classes. Four students were taking one class each and one student was taking two classes. These classes included: choir, chorus, science fiction, home economics, architectural drawing and history (a required course for high school graduation). There is no community college in the school attendance area and project students were not aware of the opportunity to attend classes at the four-year university in the area.

It appeared to the evaluator that high school classes and the project were in direct competition for time, instead of a system whereby the EBCE program was integrated into the high school.

The Individual Learning for Adults (ILS) and the Career Information System as described in the NWREL "Curriculum and Instruction Handbook" were not implemented by the project staff. The high school library had a special supply of career information materials, but only one of the interviewed students was fully aware of this potential information source. A number of magazines and journals were also available in the EBCE student room.

The project was operating with four of the action zones recommended for one school year; thus, the action zones implementation appears to be about right considering the half-year implementation period. All but one student knew what zones were and four of the six students used the zones. Three students felt zones were helpful in budgeting time. Student opinion varied widely from feeling that zones were useless to feeling they were extremely helpful.

Student project completion requirements were clearly defined but varied according to the number of hours each student spent in EBCE. Some variations in the project from the suggested NWREL "Curriculum and Instruction Handbook" appear, due to the project's late start.

All students were required to complet an introductory predesigned project (Critical Thinking) and from two to five individually-negotiated projects. The number to be completed depended on the number of hours each student spent in EBCE.

S udents could select from the suggested projects as listed in the NWREL "Curriculum and Instruction Handbook" plus other topics, with Recreation and Technology being specifically mentioned. Students reportedly selected their own topics and determined their own objectives and activities with guidance from the Learning Manager. The evaluation of student projects was, therefore, shared by the student and the Learning Manager. Student opinions about projects ranged from thinking that the projects were very helpful to two students saying they did not understand them. One student did not like to negotiate.

Students were required to complete from six to eight competencies, again depending on the number of hours spent in EBCE each week. One competency, job hunting, was required of all students. The remaining 12 competencies, as listed in the "Handbook," were represented as options. Free Enterprise was an added option and one student reported negotiating Real Estate as a competency. Students felt competencies were good learning experiences.

Every student was required to complete an exploration package as provided by NWREL. The required number of student explorations ranged from three to six. All students felt that the explorations were very helpful. Students indicated they had significant input into their choice of site explorations and were aided by the Employer Relations Specialist in the selection process. Students reported spending from seven to fourteen hours on site explorations. One student said if he liked a site, he would return to the site for a second week; thus doubling his time on one exploration.

Another student said he had used an extended exploration. This was described as returning to a site for further experience in an area of interest after the site exploration requirements were completed.

Each student had the option of completing one learning level or completing two additional explorations. Most students indicated they preferred the additional explorations.

Students were not aware of any skill-building level being offered by the EBCE Project.

Special placements were not used as described in the NWREL Curriculum and Instruction Handbook; however, three students said they had participated in "visitations." Visitations were defined as site visits with too few hours to qualify as an exploration.

The EBCE Project required that students attend nine of the twelve offered seminars and write a summary report of each seminar they attended. At the beginning of the project, students were asked to indicate special areas of interest to help the learning coordinator determine which seminar topics to offer. Students reported that seminars had been informative in the areas of Career Development, Life Skills and Competencies. Students felt that some seminars were very interesting and others were very boring.

Each student was required to keep a journal, write in it during the school week and turn it in every Friday for the Learning Manager to read and make comments. Four students reported writing in their journals every day, one student wrote every other day and one wrote at least three times a week. When asked the most important purpose for keeping a journal, one student felt that analyzing and integrating career awareness information had been most important and four students felt that developing a trusting relationship with an adult had been most important to them.

The students were asked if they would mind if the evaluator read some of their journal entries and all but one student shared their journals with the evaluator. The evaluator found it interesting that the journals were full of student self-awareness statements. Students expressed a genuine appreciation of what journals were doing for them. One student said at first he thought journals were a "pain," but now he felt they provided a valuable means of adult communication and trust.

In summary, to better serve the students, the evaluators suggest that the following areas be examined:

Accountability: Define consequences more clearly.

Classes: Integrate high school classes into the EBCE Program rather than requiring the student to decrease EBCE time in order to take high school classes.

Special Curriculum Materials: Better acquaint the students with all materials available for their use.

Student Projects: Identify which students do not understand projects and communicate needed information to them.

Learning Levels: Clearly define learning levels to all students.

Employer Seminars: Determine student interest with regard to seminar topics and speakers.

Facilities: Private office space is needed for the staff to conduct private conferences with students, keep certain records, and conduct business. For best use, this room needs to be physically close to the Learning Center.

Students had positive feelings about the project, with strong emphasis on student journals and explorations. Competencies and projects were seen as very useful and some seminars were seen as valuable. Students felt the EBCE Project was, indeed, a success and would be even better with a few adjustments.

Employers

The "EBCE Employer Opinion Survey" (see Appendix D) was used to obtain responses from four project director selected employers who had been involved in the project explorations or learning levels. The employers included:

Local Chief of Police

Deputy County Attorney

District Manager, Power and Light Company

Assistant Chief of the Fire Department.

All employers indicated they favored the project strongly. They all felt that student involvement in career explorations within the community was an important addition to the formal school program.

All employers were involved in exploration levels with the students and they communicated with the students concerning job opportunities, on-site activities, and were involved in the evaluation of student assignments.

Two employers indicated they did not have enough information about the project prior to meeting students. The employers said they usually received adequate feedback about students after they left the site. One employer, however, reported he had a student scheduled, but the student had not shown up for three or four days. The employer said he did not know what to do in such a situation.

All employers felt their employees reacted positively to students on-site, and the students increased the employees' awareness of youth.

All employers said they planned to continue the project next year because the project was worthwhile since students learned about a variety of careers and real life situations.

Two employers felt there was some problem in the management of the program.

First hand knowledge of demands in a real world, working with other people and self discipline were seen as important aspects to on-site student learning.

The Career Education material was reviewed and found adequate. A list can be found in Appendix A (not included). Also, the forms used by project personnel were checked; a complete list can be seen in Appendix B (not included).

Conclusions and Recommendations

The following briefly summarizes the evaluators' observations:

A) Conclusions:

1) The Survival Skills curriculum component was well established.

2) Student selection process required students entertaining the project to have met all graduation requirements.

3) The school credit given was elective; therefore, the project was not an alternative education project.

4) There was a good variety of sites available for student exploration.

5) There was no formalized training and/or feedback system for employers involved in the project.

6) There was a good variety of materials available for the students to use.

7) The facilities were very poor. It was hard to see how any productive activities could take place in the space provided.

8) Some students did not understand the student project component of the EBCE curriculum.

9) The NWREL accountability system was not completely implemented.

10) Some students did not use or understand action zones as a scheduling and timing device.

11) For the most part, students were either unaware of or did not use the library's career materials.

12) Students appeared not to have acquired career decision-making skills.

13) The building faculty was uninformed concerning the EBCE Project.

14) The students felt that the journals were very valuable in allowing them to establish a trusting adult relationship.

B) Recommendations:

1) The EBCE Project staff should continue to provide the quality of student experiences that was noted by this site visit.

2) The EBCE staff needs to develop and implement an employer training and feedback plan.

3) The Project administrators should seek to mainstream the Project by allowing students to meet some graduation requirements through project activities. In this way the Project can become an alternative educational program.

4) The EBCE staff needs to review the Project components and requirements with each student. The staff should make sure the student understands the scope, objectives and processes for each project component.

5) The EBCE staff should review the NWREL Accountability System.

6) An explicit effort needs to be made to inform the building faculty of the EBCE Project.

7) An attempt should be made to locate more suitable facilities.

PROGRAM STATUS REVIEW

Program status review is a natural progression from the Management Planning document described on pages MP-1 thru MP-34 of the Wyoming Career Education Implementation Hand-Book. Its purpose is to allow program management to monitor the implementation of the program in light of intended processes and outcomes.

Overview

The program status review is accomplished on a periodic basis. Observations are made in light of the program's plan. The program manager, through this review, can document the actual processes implemented and products completed.

The question of who should perform the objective review is appropriate at this point. The experience of the Center for Education and Management reveals using the administrator, program manager, or a person not connected with the program tends to ensure a complete review. Furthermore, if the administrator or the program manager completes the review he will be informed of the progress of the program in some detail, so the review serves as a communication channel.

The time required to complete a review depends on how well organized the program is and the scope of the program. The reviews completed by the Center's staff have taken from two to four hours for Experience-Based Career Education Programs.

The review is basically a progress report. The manager is asked to describe and document the progress toward each objective. The reviewer then makes a judgment as to the status of that objective in light of the intended status as described in the management plan. As one goes through a program status review he/she will need to update the management plan. It is reasonable to expect that once into the program some changes will need to be made in program activities. Remember, the management plan is a working document and must facilitate, not hinder, program implementation.

This section is in two parts. The first provides a step-by-step description of how to complete a program status review. The second part provides a partial sample of a program status review report.

Program Status

There are four major questions to be considered when conducting a program status review:

- What is the objective being reviewed?
- What activities have been performed relating to the objective?
- To what extent have the activities affected the accomplishment of the objectives?
- What documentation is available to verify that the activities related to the objective have been completed?

Form 4 depicts one means of recording the responses to the four questions. Following are steps one should use in conducting a program status review:

Step 1: Record the objective to be reviewed on the program status review form.

One needs to refer to the management plan and record the major objectives to be reviewed in the column under Objectives. For illustrative purposes, the management plan on page MP-7 of the Implementation Handbook is used. In viewing Figure 1 it can be seen that the first outcome (objective) listed in the sample management plan is also listed as the first objective to be reviewed on the program status review form. The sample program status review report (Figure 13) is not completely parallel to the sample management plan. The sample plan was intentionally made general so it could be modeled; the program status review is an actual review of a specific program.

Step 2: The second step requires the program manager to describe the activities related to the specific objective.

The evaluator records the activities under the heading of Activities Performed on Behalf of Objectives. It should be noted that planned activities should not be recorded; record only those activities that have been completed. The number on the activities refer to the number of that activity as listed on the management plan.

3/6/78

FORM

PROGRAM STATUS REVIEW FORM

COMPONENT: _____ _____

OBJECTIVE	JUDGMENTS 1	2	3	4	ACTIVITY PERFORMED ON BEHALF OF OBJECTIVES	DOCUMENTATION OF ACTIVITY

PSR-3

OG - On-Going
CN - Clarification Needed
SJ - Suspend Judgement

AT - Attained
P - Partial
NAT - Not Attained

AC - Activated
NAC - Not Activated
NDAC - Not Due for Activation

Step 3: The reviewer then must inspect the documentation that supports the activities performed. The required documentation should have been defined in the management plan. Most of the documentation will be products such as completed reports, agendas, working papers, payment vouchers, etc. However, varification can also be by actual experience in an activity by the reviewer, such as being in attendance at a workshop or at a meeting. It is important for the reviewer to persist in obtaining the required documentation.

Step 4: Once all the information has been collected on an objective, the reviewer needs to make a judgment on the extent the objective has been effected. The judgment can be made on two levels, depending on the specificity of the objective and activity statements listed.

If the objectives are general in nature and take several activities to complete them, the reviewer may want to judge the progress of each activity. This method is used in the sample program status review (Figure 14). The other alternative is to make one judgment for each objective. This can be done if the objectives are specific in nature.

The sample form lists nine judgments one might make on any activity or objective. They are:

- On-going - this means the activities for this objective have been started and they will reoccur. Types of objectives that require this judgment might be, "to have a monthly staff meeting". Here one would hope to observe that staff meetings have been held; however, the objective cannot be judged attained until the end of the program's planning cycle; one simply states the activity is on-going.

- Clarification Needed - means the reviewer is not sure of the relationship between the information and the objectives or that the documentation given does not support the activity as being completed. The reviewer should ask the program manager to clarify the objective so that it is more specific.

- Suspend Judgment - means the reviewer does not have enough information to decide the status of the activity or objective.

- o Attained - means the activity or objective has been completed.

- o Partially Attained - means the activity or objective has been partially completed and there is no further activity planned related to the objective.

- o Not Attained - means the activity or objective was not completed in any substantive way.

- o Activated - means the activity has been started, is in progress and is not finished at the time of the review. This is different from the on-going judgment in that the objective is not one that requires recurring activities. An example is "to complete a work plan for inservice training workshops for EBCE programs." This activity may be judged activated if the program manager has met with staff, has a draft outline of the plan, but still must gain approvals from the inservice coordinator and building administrators.

- o Not Activated - means the activity should have been started, is past due and, therefore, is behind schedule.

- o Not Due for Activation - means it is not time to start the activity.

The reviewer may wish to make other types of judgments.

Summary

There are four parts to the objective review process: (1) defining the area in which the reviewer is to make observations, (2) recording activities, (3) documenting the activities and (4) judging the activities.

This process ties the evaluation of the program to the planning process. A new program should be reviewed at least four times a year; however, an on-going program may require review only once a year.

FIGURE 14

(SAMPLE) PROGRAM STATUS REVIEW FORM

Component MANAGEMENT PROJECT EBCE

Objective	Judgment 1	2	3	4	Activity Performed on Behalf of Objective	Documentation of Activity
1.01 To develop a first year management system for all project components	AT				Activities: 1.01.1 Staff Development Plan	Management plan on file with Project Director and State Coordinator
	AT				1.01.2 Materials Development Plan	
	AT				1.01.3 Instructional Plan	
	AT				1.01.4 Com. Involvement Plan	
	AT				1.01.5 Dissemination Plan	
	CN				1.01.6 Reassessment is defined as an in-house method of up dating the MBO plan.	No documentation to date

PSR-6

OG - On-Going
SJ - Suspend Judgment
CN - Clarification Needed

AT - Attained
P - Partial
NAT - Not Attained

AC - Activated
NAC - Not Activated
NDAC - Not Due for Activation

(SAMPLE) PROGRAM STATUS REVIEW FORM

Component MANAGEMENT PROJECT EBCE

Objective	Judgment 1	2	3	4	Activity Performed on Behalf of Objective	Documentation of Activity
1.03 To complete and submit, on time, all necessary reports	NDAC				1.03.1 Quarterly Program Reports Due Dec. 8, 1976, March 8, 1977, June 8, 1977, Oct. 1, 1977 (Yearly)	Not due
					1.03.2 Quarterly Budget Reporting dates: Dec. 1, 1977	Not due
					1.03.3 Final Report is due Oct. 1, 1977	Not due
					1.03.4 No documentation to date	None on file
					1.03.5 Second year proposal	

PSR-7

OG - On-Going
SJ - Suspend Judgment
CN - Clarification Needed

AT - Attained
P - Partial
NAT - Not Attained

AC - Activated
NAC - Not Activated
NDAC - Not Due for Activation

(SAMPLE) PROGRAM STATUS REVIEW FORM

Component MANAGEMENT PROJECT EBCE

Objective	Judgment 1	2	3	4	Activity Performed on Behalf of Objective	Documentation of Activity
1.05 To keep management current with educational research and development	AT				1.05.1 MBO workshop completed Sep-ember 13, 1976	MBO Notebook/MBO Plan
	AC				1.05.2 MBO workshop attended other workshops	Notebook

PSR-8

OG - On-Going
SJ - Suspend Judgment
CN - Clarification Needed

AT - Attained
P - Partial
NAT - Not Attained

AC - Activated
NAC - Not Activated
NDAC - Not Due for Activation

(SAMPLE) PROGRAM STATUS REVIEW FORM

Component MANAGEMENT PROJECT EBCE

Objective	Judgment 1	2	3	4	Activity Performed on Behalf of Objective	Documentation of Activity
1.06 To provide for efficient and organized control of materials, equipment etc.	NAT				1.06.1 No inventory control system established	None on file
	NAC				1.06.2 No organization of materials established	None on file

PSR-9

OG - On-Going
SJ - Suspend Judgment
CN - Clarification Needed

AT - Attained
P - Partial
NAT - Not Attained

AC - Activated
NAC - Not Activated
NDAC - Not Due for Activation

(SAMPLE) PROGRAM STATUS REVIEW FORM

Component STAFF DEVELOPMENT PROJECT EBCE

Objective	Judgment 1	2	3	4	Activity Performed on Behalf of Objective	Documentation of Activity
2.01 To select and maintain a staff for the delivery of the EBCE Model	AT				2.01.1 Proposal indicates staff requirements on page 7	See Proposal
	NAT				2.01.2 Project consultants are listed (5), LD teacher (Chotty Buckles), Allen (coordinator), Kelly (Manager), Foreman/ Miller (guidance)	List is mostly finalized.
	NDAC				2.01.3 Job descriptions not being revised	

PSR-10

OG - On-Going
SJ - Suspend Judgment
CN - Clarification Needed

AT - Attained
P - Partial
NAT - Not Attained

AC - Activated
NAC - Not Activated
NDAC - Not Due for Activation

(SAMPLE) PROGRAM STATUS REVIEW FORM

Component RESOURCE CENTER DEVELOPMENT PROJECT EBCE

Objective	Judgment 1	2	3	4	Activity Performed on Behalf of Objective	Documentation of Activity
3.02 To implement a materials usage monitoring system for use in quality control	NDAC				3.02.1	
	NDAC				3.02.2	

PSR-11

OG - On-Going
SJ - Suspend Judgment
CN - Clarification Needed

AT - Attained
P - Partial
NAT - Not Attained

AC - Activated
NAC - Not Activated
NDAC - Not Due for Activation

(SAMPLE) PROGRAM STATUS REVIEW FORM

Component CURRICULUM & INSTRUCTION PROJECT EBCE

Objective	Judgment 1	2	3	4	Activity Performed on Behalf of Objective	Documentation of Activity
4.01 To define the scope and nature of the EBCE instructional system	AT				4.01.1 Funded proposal indicates system selected	Proposal
	AT				4.01.2 Goal statements established by component pp 1-11	Proposal
	AT				4.01.3 Learners outcomes defined	Proposal
	AT				4.01.4 Instructional process defined	EBCE Proposal on file (Appendix F)
	NDAC				4.01.5	

PSR-12

OG - On-Going
SJ - Suspend Judgment
CN - Clarification Needed

AT - Attained
P - Partial
NAT - Not Attained

AC - Activated
NAC - Not Activated
NDAC - Not Due for Activation

(SAMPLE) PROGRAM STATUS REVIEW FORM

Component COMMUNITY INVOLVEMENT PROJECT EBCE

Objective	Judgment 1	2	3	4	Activity Performed on Behalf of Objective	Documentation of Activity
5.01 Define Scope and role of community involvement	AC				5.01.1 Brochure developed but not printed	Brochure on file
	AC				5.01.2 Meetings with businessmen have been established to include 9 businesses/ organizations to communicate role and scope: EBCE handout	Learning site analysis Forms on file for 9 sites

PSR-13

OG - On-Going
SJ - Suspend Judgment
CN - Clarification Needed

AT - Attained
P - Partial
NAT - Not Attained

AC - Activated
NAC - Not Activated
NDAC - Not Due for Activation

(SAMPLE) PROGRAM STATUS REVIEW FORM

Component DISSEMINATION PROJECT EBCE

Objective	Judgment 1	2	3	4	Activity Performed on Behalf of Objective	Documentation of Activity
6.01 To provide general type information (publications) to the general public	AC				6.01.1 Brochure developed but not printed	Copy on file
					EBCE handout for community organizations	Copy on file
	NAC				6.01.2 No plans formulated to present to group	No documentation on file

PSR-14

OG - On-Going
SJ - Suspend Judgment
CN - Clarification Needed

AT - Attained
P - Partial
NAT - Not Attained

AC - Activated
NAC - Not Activated
NDAC - Not Due for Activation

REPORT WRITING

The final report summarizes project activities and accomplishments. The final report should answer several questions: What did the project intend to accomplish? What was done in order to accomplish the objectives? What did the project accomplish? What recommendations should the various decision-makers consider?

Overview

Many audiences within the school district will want to receive a final evaluation report. The format your report takes will depend largely on the audience for which it is intended. For purposes of this handbook, it is assumed the report will eventually go to decision-makers with some degree of responsibility for the project. This could include state funding sources, school boards, superintendents, etc. One part of this section covers techniques on how to report results to lay audiences. Unfortunately, there are no clear-cut guidelines or rules for this difficult task. The approach used will vary from district to district, and even from school to school. As an evaluator it is important to have a "handle" on the data so explanation can be effected at any level.

Outcome evaluation measures how effective a fully developed program has been, and tries to estimate the effect it will have in the future. For this reason a comprehensive final or summative report should contain at least the following eight sections. Keep in mind that reports to lay audiences and other less statistically-oriented groups will emanate from the final report.

Final Summative Report Format

Section I - Project Identification

The purpose of this section is to identify the project and introduce the evaluator.

A. Project title and where it was conducted
B. Period covered by the report
C. Date submitted
D. Name of evaluator

Section II - Project History and General Purposes

The information in this section should explain why the project was necessary, who participated in its development and any special funding or legislation made available to conduct the project.

A. Funding source/legislation
B. Reason for the project

1. results of needs assessment and analysis
2. relationale for the project focus

C. Person(s) involved in writing the proposal or getting the project started or funded

Section III - Statement of Goals and Objectives

This section should state the specific purposes of the project. A clear statement of the goals, objectives and any special problems or hypotheses to be investigated should be included.

A. Project Goals
B. Project Objectives
C. Special considerations or areas of investigation
D. Statement of Hypotheses

Section IV - Project Description

This section should describe the project itself. A clear description of the project may be useful to other schools and districts interested in adopting or adapting the project.

A. Description of major project components (management, instruction, materials development, staff development, etc.)

B. Essential nature of operation

1. instructional model
2. facilities
3. materials used
4. sequence and timing
5. other

C. Project personnel

1. teachers
2. aides

3. students
4. selection and assignment
5. administrative personnel

Section V - Evaluation Methodology

This section should describe the methods by which the project was evaluated. Instruments used, data collection schedules, design, control of variables and the relation of various data collected to questions asked should be included.

A. Personnel conducting the evaluation

B. Data Collection Schedules
   1. what data was collected on behalf of each objective
   2. instrumentation (how data was collected - e.g., tests, observation, interviews, surveys, etc.)
   3. timeline - when data was collected
   4. persons responsible for data collection

Note: (See Data Collection section. Most of the information above may be represented in tabular form and need not be a long narrative. The section on Data Collection contains a Data Matrix form that can be used for this purpose.)

C. Data Analysis Procedures

Generally, a discussion of the sampling unit used, statistical procedures (e.g., t tests, analysis of covariance, etc.), significance levels used, special scoring or scaling procedures and missing or questionable data will suffice.

Section VI - Project Outcomes

This section should summarize actual results obtained from each instrument or process. The results should be arranged according to specific questions which the study is intended to answer. Unanticipated outcomes, both negative and positive, should be discussed. Graphic devices such as tables, graphs and charts should be used and accompanied by narrative descriptions.

Section VII - Summary Discussion, Conclusions, Recommendations

The major results should be grouped in terms of questions and decision areas being investigated. Unanswered questions,

which may lead to misleading conclusions because of inherent design weaknesses or uncertainity of the accuracy of the results, should also be discussed. The results should be discussed in terms of significance and recommendations presented in light of these results.

A. Discuss results in terms of questions and decision areas.
B. Discuss factors that may have biased results.
C. Note weaknesses in project design and evaluation design.
D. Note limitations of the study, especially concerning generalizations.
E. Discuss implications.
F. Discuss additional evaluation activities which might be carried out in the future.
G. Present recommendations.

Section VIII - Executive Abstract/Summary

This final section should summarize major findings and recommendations. It is a good idea to place this at the beginning of the report so busy decision-makers can read the abstract first.

Lay Audiences

For the most part, a formal summative report containing all the sections outlined above would prove frustrating for the average reader not familiar with research and statistical methodology. Often an evaluator will need to condense a final report for presentation to school boards, advisory councils, PTA's or other community organizations. Generally speaking, these audiences will not understand such terms as standard deviation, analysis of covariance, etc. A good idea is to write an abstract of the final report using lay terms. This abstract could then be illustrated with simple graphs, charts and tables to discuss the major findings. Most lay audiences will be interested in one or two questions.

1. Did the new project affect students in a positive manner?
2. How much did the project cost and was it worth the price?

A detailed discussion of cost benefit analysis is beyond the scope of this handbook, as are various budgeting systems keyed to objectives. These two questions are related to

practical significance. For example, a project could demonstrate statistical significance but cost so much to implement and maintain that achievement gains are offset by the sheer cost of the materials. Staffing and logistics of the delivery system.

An Alternative Report Format

An alternative format for an evaluation report is presented below.

I. Introduction to the Project
   - A. Project Rationale
   - B. Project focus: Management Plan and Objectives of the Program

II. Description of the Target Population

III. Project Operation
   - A. Staffing Summary
   - B. Description of the Treatment
   - C. Instrumentation

IV. Project Outcomes
   - A. Report of Site-Visit Findings
   - B. Objectives Status Report
   - C. Student Outcomes

V. Summary Discussion, Conclusions

VI. Recommendations

VII. Abstract

This format may be used either in a formative or summative setting. Topics covered would vary according to the evaluation requirements. This format is one used by the Center for Education and Management, Inc. The format presented in the first half of this section is much more detailed and should be used as a guide when writing a final report.

Samples of evaluation reports can be obtained from your State Coordinator for Career Education.